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vernment of Newfoundland and Labrador

Report

PRICING AND MARKETING IN THE NEWFOUNDLAND LOBSTER INDUSTRY

Prepared For
FISHING INDUSTRY ADVISORY BOARD
ST. JOHN'S, NEWFOUNDLAND

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Opinions expressed and conclusions reached by the authors are not necessarily endorsed by the sponsors of this study

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FOREWORD

Prices received by Newfoundland lobster fishermen are, annually, a cause for concern or dissatisfaction, because of higher prices paid in the Maritime Provinces, and because of the reported level of lobster wholesale prices in the Boston area.

A number of recent reports concluded that there is justification for regional price differentials based on transportation and handling costs and varying mortality rates in lobsters from different areas. It was felt, nevertheless, that an in-depth review of the structure and historical performance of the lobster market was necessary to provide a "yardstick" against which prices paid to Newfoundland fishermen could be evaluated.

It was to this purpose that the Hon. James Morgan, Minister of Fisheries, authorized the FISHING INDUSTRY ADVISORY BOARD to enter into a contract with three faculty members of the School of Business, Memorial University of Newfoundland, to carry out the required research. This report is the result of their efforts.

It is hoped that the information contained herein will assist in the realization of the final objective which is:

"To optimize prices received by Newfoundland lobster fishermen, and to minimize existing price differentials with other lobster producing areas in the Maritimes."

FRANK DOPPLINGER,
Chairman.

March 1st, 1981

FISHING INDUSTRY ADVISORY BOARD

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PART A. INTRODUCTION

A. I. Background

Over the past several years, there has been continuing concern as to whether or not Newfoundland fishermen are being paid a "fair" price for their lobster.

Fishermen have observed that the prices paid for lobsters seem to drop during the months of May, June and July. The decline in price means that the income received by Newfoundland lobstermen for the same catch is less than their counterparts in Nova Scotia where the lobster season begins earlier. A more interesting observation is that on any given day in either May, June or July the wholesale price paid for Newfoundland lobster in the Boston market may differ from the price paid for Nova Scotia lobster, Maine lobster, and local Massachusetts lobster. It is sometimes higher, but more often lower.

The dealers, on the other hand, complain about high operating costs, low rates of return and excess competition. Last, but not least, the consumer displays incredulousness at the "exorbitant" price of a lobster in a restaurant when the prices paid to fishermen are so much less.

In summary then, it would appear to the outsider that there are no "real winners" in the lobster industry, but those who participate return year after year to fish, sell and buy lobster.

Previous studies carried out in 1977 on behalf of the Government of Newfoundland and Labrador under the auspices of the Fishing Industry Advisory Board came to the conclusion that transportation costs,

differences in holding costs and differences in lobster mortality ("shrinkage") were an explanation for price differentials. However, despite these previous studies the concern as to whether or not Newfoundland fishermen are receiving a "fair" price for their lobsters still exists.

A. II. Objectives

It is with this background in mind that the Fishing Industry Advisory Board has commissioned this study. As stated in the study team's agreement with the Advisory Board, the objective of this study is to provide a means to evaluate prices being offered to Newfoundland fishermen for lobsters as compared with prices being paid in other lobster producing areas and also to evaluate prices paid at the wholesale level.

Economics tells us that market prices are efficient and equitable if they are generated in markets which can be described as competitive. In such markets there are many buyers and sellers who are free to enter and exit. The fundamental point is that buyers or sellers either by themselves or in colluding groups cannot set prices in a competitive market; in other words, everyone is a "price-taker" not a "price-maker." If markets are not competitive and prices can be set by some party, then excess profits could be made and for suppliers the rate of return on their equity and efforts would be greater than in the competitive markets.

The logical approach adopted by the study is to examine the structure of the markets in which lobster prices are set. If the markets can be described as being competitive, then our evaluation would be that prices which are generated by that market are those which are consistent with an "ideal" market economy[1] and as such are "fair".

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[1]We assume that the prices generated by competitive market forces are as desirable as those generated by any other market structure.

A. III. Summary of Study Findings

The findings presented here are discussed in detail in the body of the report and presented again at the ends of the relevant sections. Recommendations to the Fishing Industry Advisory Board based on these findings are presented at the end of the report, on p. 82.

1) The various markets in the Newfoundland lobster industry can, in the long-run, be described as competitive, and market prices are determined by the independent forces of demand and supply. Thus, it can be concluded that these prices are consistent with efficiency and are "fair" if one believes in a market economy.

2) At the start of the season there is no "rule of thumb" which will permit the determination of prices to Newfoundland fishermen before Newfoundland lobsters arrive on the Boston market, since their arrival affects the market price.

3) There is a normal variation in the mark-up price over the season and from year to year. Therefore, even given a Boston price, one cannot have a single or standard mark-up. Rather, one must consider a standard range of mark-ups.

4) Mark-ups on lobsters from different districts within the province vary. For example, mark-ups on lobsters from Western Newfoundland are lower than those from the Bonavista area.

5) The closer one moves to the Boston-New York market then the lower the mark-up and the more highly correlated the Boston price is with the ex-vessel price, that is, the price paid to lobster catchers.

6) Competition in the local markets can affect the price. Such competition is thought to account for the ex-vessel price differential between the Northern Peninsula lobsters and lobsters on the rest of the Island.

7) Under present conditions it is not clear exactly what effect the extra supplies of Newfoundland lobster have on the Boston market. Prices do fall, and this fall in prices is what would be expected. Because demand for lobster is relatively price sensitive, small price changes may cause relatively large changes

in the quantity demanded. Lowering the price can increase sales substantially, and so increase overall revenue. Profits will increase if the increases in total revenues are greater than the increases in total costs.

8) Given a price which fishermen receive in Newfoundland over a period of time it can be determined what one would normally expect the dealer price in Boston to be for these lobsters.

9) There is a consistent price differential of $ .10 - $ .15 per pound between Newfoundland and Western Nova Scotia lobsters at any point in time in the Boston market. The Boston price for Western Nova Scotia lobsters is higher. There tends to be a smaller difference between Newfoundland and Cape Breton lobsters.

10) This price differential is primarily due to the greater handling costs for Newfoundland lobsters, greater costs involved in "seasoning"[1] the Newfoundland lobster and the higher mortality (or shrinkage rate).

11) The extra burden associated with additional shrinkage and the additional transportation costs of Newfoundland lobsters seem to be absorbed, in part, by the dealers and processors.

12) The additional shrinkage associated with Newfoundland lobsters may not be due solely to the extra time in transportation. Rather, there may be a compound effect of the above factor coupled with storage in Boston water which is much warmer and hence, has a lower oxygen content. In addition, the Boston water is much less saline than the ocean water. The ideal salinity of the water is about 3 percent.

13) The European market probably has a better rate of return on it for Canadian processors than the Boston market under the new airfreight rates.

14) Newfoundland processors do not ship to Europe because of the potential loss associated with delayed and cancelled flights due to fog. New handling conditions

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[1] "Seasoning" means acclimatizing the lobster to the new environment.

for seafood and Air Canada's new "Seafood Commodity Rates" now make it more profitable to ship directly to wholesalers in the United States rather than through Boston. To the extent that Newfoundland lobsters can be switched from the Boston market to the European market or other markets, then the Boston price will rise. (1)

15) Packaging costs are not substantially different for any processors which must package. The packaging system using a styrofoam box inside a cardboard box with a "sponge" mat seems to produce the lowest shrinkage when shipping by airfreight.

16) The pounding of Newfoundland lobsters will become increasingly profitable as the European market and the tourist market in the province develop.

17) In general, it is best to leave the lobster markets free from interference. If prices are suggested which differ from the free market prices inefficiencies can occur which could result in wastage of the stock or lower incomes for fishermen.

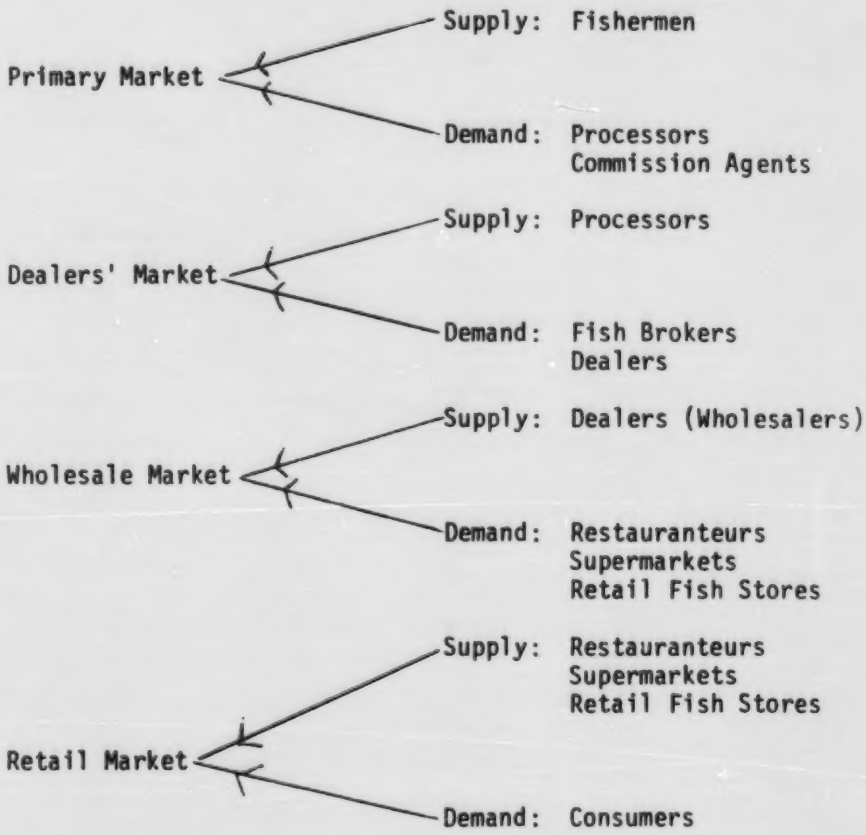
(1) NOTE: There is a possibility that exports to Europe may be curtailed due to European concerns about possible transfer of Gaffkaemia, a blood disease common in the U.S.A. and Canada, but occurs only rarely in European lobsters.

A. IV. The Vertical Chain of the Lobster Markets

In general, there are four vertical markets for lobsters. Chart 1 illustrates graphically the way in which these four markets are interrelated.

Chart 1

The Vertical Chain of Lobster Markets



Source: Data derived in the study.

The chain begins in the markets with the fisherman or lobster catchers and ends with the consumer, and it is ultimately these two forces which determine prices in the markets. In the links in between, the buyers who demand the lobsters on one level of the chain become sellers on the next level up.

Obviously it is possible under certain circumstances to remove links from the chain. For example, there are consumers who buy directly from the fishermen. Further, all dealers in the Boston area buy directly from local fishermen, in addition to buying from processors in Canada and Maine. In some instances, dealers will send out agents and buy directly from the fishermen out of the province or state. In 1980 the Bay State Lobster Company of Boston bought directly from the fishermen on the Great Northern Peninsula of Newfoundland.

It may also be the case that more links will need to be added. Boston dealers acting as collectors sell their lobsters to dealers in other cities.

In summary, there are many agents involved between the time the lobster trap is set and the time the lobster is finally consumed. Obviously, the more agents involved the higher will be the final price of lobster to the consumer. However, each agent performs a specialized function. Therefore, when one considers an agent or the evasion of an agent in the chain, one must consider the task which that particular type of agent performs. It is important to remember, however, that the consumer is relatively indifferent as to how many times his lobster changed hands or where his lobster was caught. What the consumer is concerned about is the size of the lobster and the cost, to him, per pound.

What, apart from the attributes noted above, distinguishes a lobster caught in Newfoundland from a live lobster sold in Denver? Generally, in terms of the appearance and physical condition of the lobster, the answer is "nothing." The obvious answer is in terms of the time and place of consumption. The difference between the price the consumer pays and the price the fisherman receives is basically related to these two properties. Herein lies the problem. The consumer is dissatisfied because, even in Boston during the second week of June when prices may be at their lowest, he may have to pay $6.00 for 1 1/2 pound lobster knowing that, for the same physically identical lobster, the fisherman received only $3.00. At the same time, the fisherman is unhappy because of the $3.00 (i.e. $6.00 - $3.00) in foregone income. Of course, there is always an option open to both parties should they elect to eliminate some of the intermediary agents involved in the lobster market chain. The fisherman could choose to take his lobsters to Boston, care for them himself on the way and sell them himself in the Boston market at the prevailing price. However, he would find that his costs, by far, outweighed his revenues, not to mention lost income due to unattended traps. On the other hand, the consumer could come to Newfoundland and buy the lobster directly from the fishermen. However, the 'real' cost per pound including air fare, ground transportation, meals and lodging would be considerably greater than the $3.00 per pound paid to the fisherman. Either of these options would successfully eliminate the "middleman" but at a cost which greatly exceeded the benefits.

The foregoing discussion illustrates the specialized function which each agent performs. Such an understanding of the services performed by each agent is necessary, particularly if one feels that agents can be bypassed because their services are non-essential. It is also useful when evaluating the prices paid for lobster in each of the several markets.

With respect to this study, a primary market will exist in each community in Newfoundland which catches and sells lobsters. In more aggregate terms, one can think of primary markets at the provincial or state level. The major dealers' market for Newfoundland lobster is the Boston market. The major wholesale market is the New York market, and retail markets exist throughout North America and Europe (see Charts 1 and 2).

There is no single factor or market which determines the price of lobster at any given stage in the market chain. Rather in the final analysis, there are complex interactions within and between the several markets which determine the price in any one of the vertical markets, interactions which are probably not fully appreciated or fully understood even by those in the industry.

Chart 2

A Typical Market Path for Newfoundland Lobster

Primary Market	Port Au Choix
↓	
Dealers' Market	Boston
↓	
Wholesale Market	New York
↓	
Retail Market	New York

Source: Data obtained in study and Chart 1.

A. V. Concluding Remarks

In the sections which follow each of the markets in the vertical chain starting with the primary markets shall be considered. The markets are not independent of one another, nor does one market level dominate another. In other words, it would be erroneous to state that the prices paid to fishermen in Newfoundland are determined by prices paid for lobsters in the Boston dealers' market. What is true is that the prices paid to fishermen are highly correlated with the Boston dealers' price, that is, the local price moves with the Boston price. But, as is well known in statistical theory, correlation of two variables does not imply causality since there may be a third variable which causes the other two variables to move together. In this study such a "third variable" has not been identified.

PART B. THE MARKETS

B. I. The Primary Market

B. I. 1 Introduction. The term "primary" market is taken to mean that market in which lobsters are supplied by fishermen or "catchers" and are bought by a second party. The second party may be a processor, a commission agent, a dealer or a retailer. Most of the lobster caught in Newfoundland waters are bought by processors.

On the supply side, the market is highly controlled in Canada. Fishermen must obtain lobster licences and are only permitted to catch lobsters during seasons specified by the Federal Government. Rather than having one season, the Atlantic coastline is divided into districts and "open seasons" are set for each district. The commencement and duration of the season are primarily determined by the abundance of the lobster stock and the period in which lobsters are likely to shed or moult. Lobsters, having shed their hard shells and obtaining soft new shells are much more prone to damage during catching and handling.

The map on the following page outlines the various districts in Eastern Canada. Table 1 shows the "open seasons" per district.

In Newfoundland the season begins on April 20th in Districts 11, 13 and 14 and eventually ends on July 15th in District 13. It is important to note that many of the districts are open during May and June. One of the major districts in Nova Scotia, District 4, shuts shown as of May 31st.

Diagram 1 - Lobster Fishing Districts

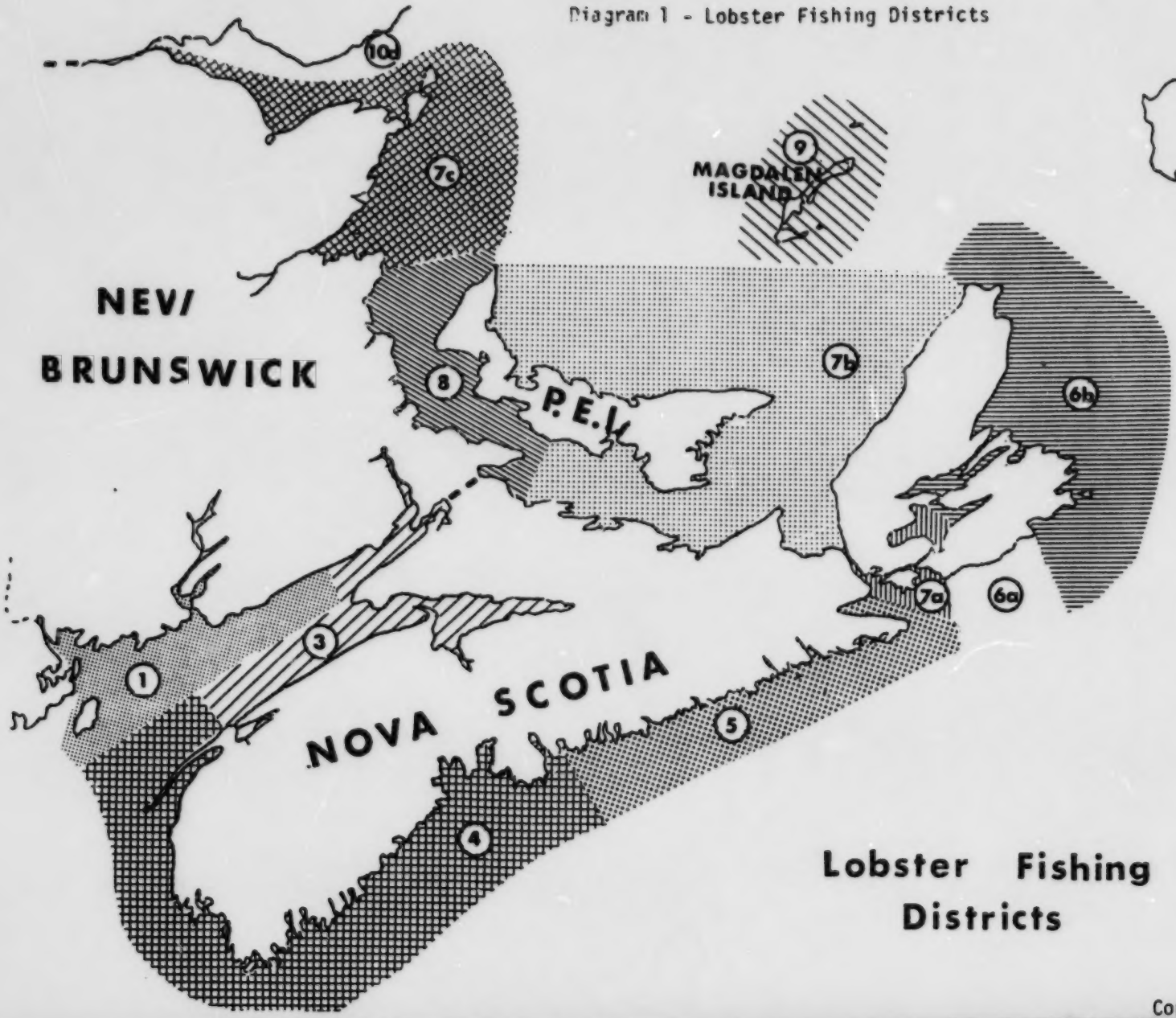


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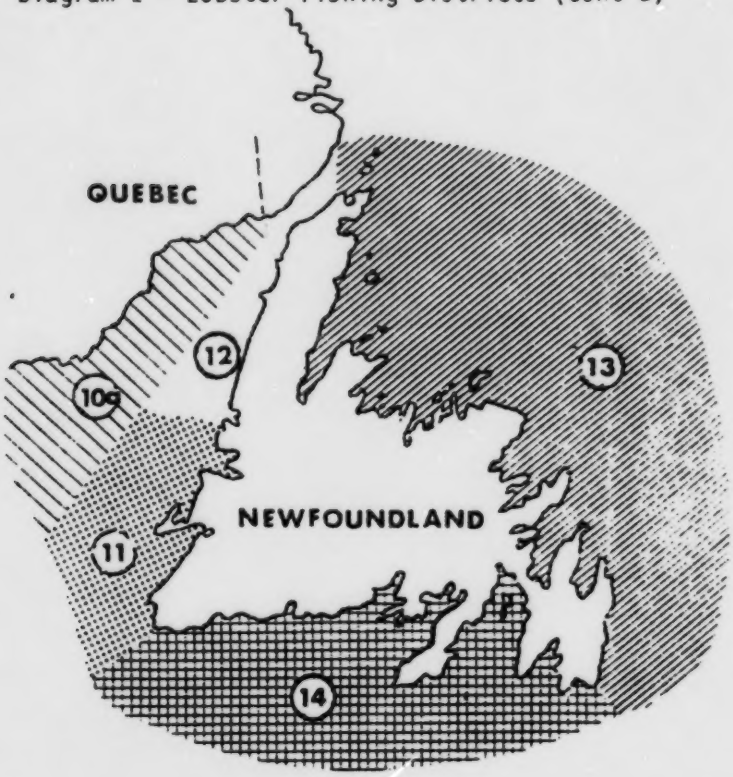
Diagram 1 - Lobster Fishing Districts (Cont'd)



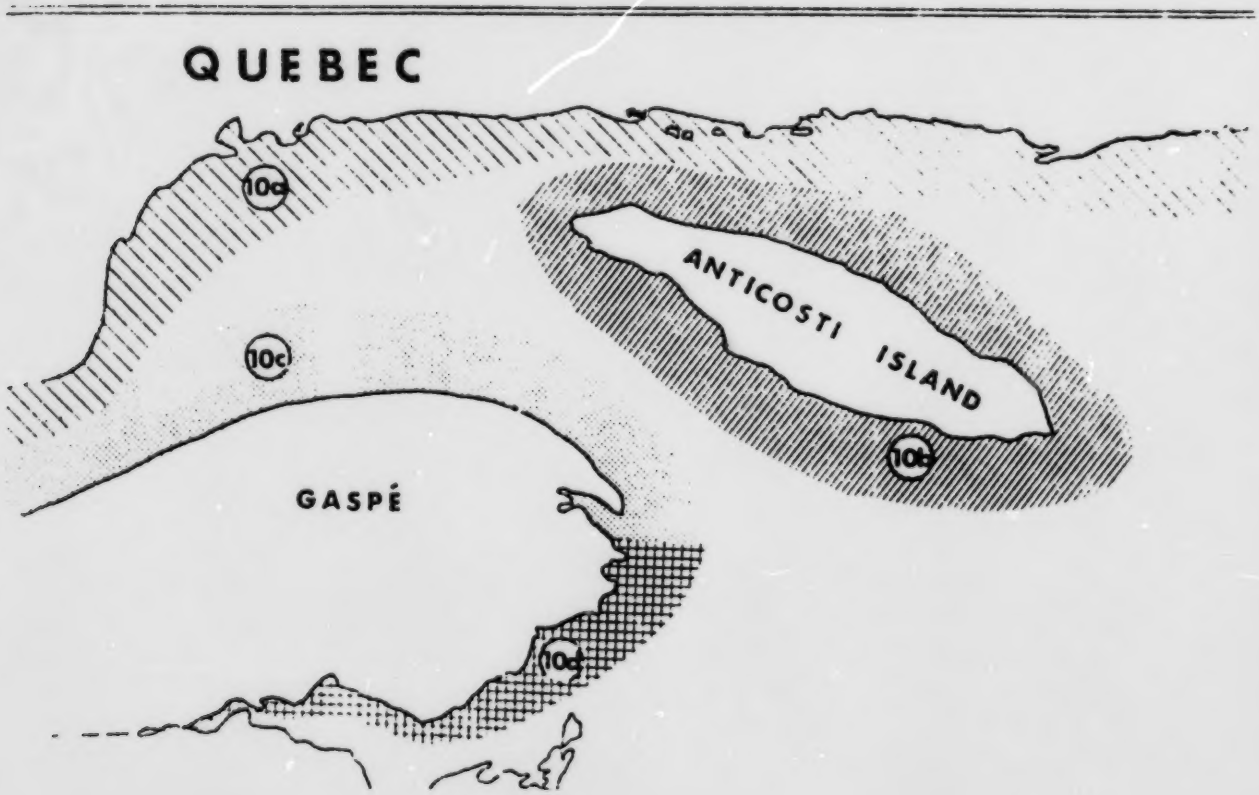


Table 1

Lobster Fishing Districts - "Open Seasons"

District Number	Minimum Size[1]	Seasons
1	3 3/16"	2nd Wed. Nov. to 3rd Thurs. June
3	3 3/16"	Oct. 15 to Dec. 31; Mar. 1 to July 31
4	3 3/16"	Last Tuesday in Nov. to May 31
5	3 3/16"	Apr. 20 to June 20
6a	3 3/16"	May 20 to July 20
6b	2 3/4"	May 16 to July 15
7a	3 3/16"	May 1 to June 30
7b	2 1/2"	May 1 to June 30
7c	2 1/2"	May 1 to June 30
8	2 1/2"	Aug. 10 to Oct. 10
9	3"	May 10 to July 10
10a	3"	May 20 to July 31
10b	3"	June 15 to Aug. 15
10c	3"	May 10 to July 27
10d	3"	May 1 to July 17
11	3 3/16"	Apr. 20 to July 5
12	3 3/16"	May 5 to July 10
13	3 3/16"	Apr. 20 to July 15
14	3 3/16"	Apr. 20 to June 30

[1] Minimum length measured from rear of either eye socket along a line parallel to the centre line of body shell, to the rear end of body shell.

B. I. 2 The Volume of Lobsters Supplied in the Primary Markets.

Diagrams 2 and 3 which follow provide an indication of the relative density of lobster catches along the East Coast of Canada and the United States and the strong seasonal component of such catches.

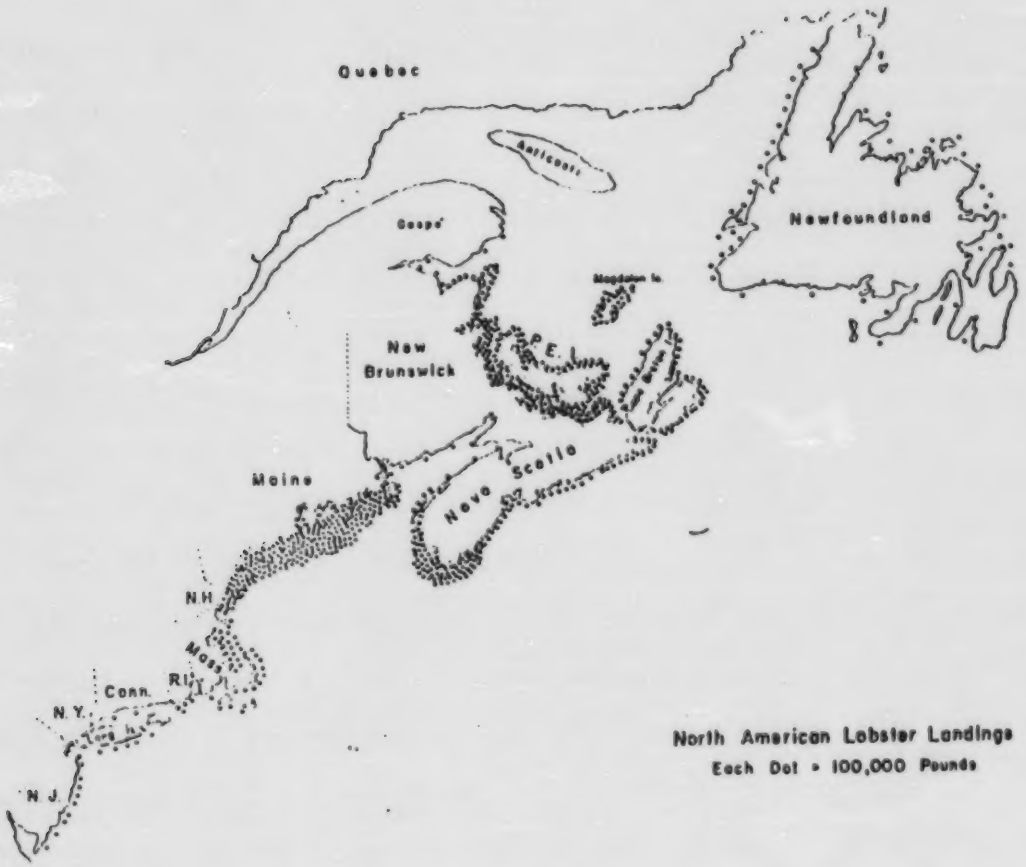
From Diagram 2 it is clear that the principal producers are Maine, Nova Scotia and Prince Edward Island. The Newfoundland catch on an annual basis is far less.

In determining the dealers' price in the Boston market, the relevant supply is one which could satisfy wholesale demand at some point in time. It may be, therefore, that while the supply of lobster from Newfoundland may be relatively small on an annual basis, it plays an important role on the Boston market during a particular period of the year, particularly June and July. Diagram 3 reproduced on pages 19 and 20 indicates the catches along the Atlantic Coast during the various months of the year.

Up until April the catches are relatively sparse, with the supply primarily coming from Maine and Western Nova Scotia. In May the supply is noticeably heavier with the heaviest catches in Districts 7 and 9 which include parts of P.E.I., New Brunswick and the Magdalen Islands. In June the supply begins to drop off and District 4, Southwestern Nova Scotia, shuts down. The supply is very light in July as many lobsters are beginning to moult. The warm water around Prince Edward Island will cause the lobster there to moult earlier and, therefore, the Western Northumberland Strait, District 8 opens up in August. Note too, from Diagram 3, that the supplies along the American coast are increasing in August and September. An interesting phenomenon are the

Diagram 2

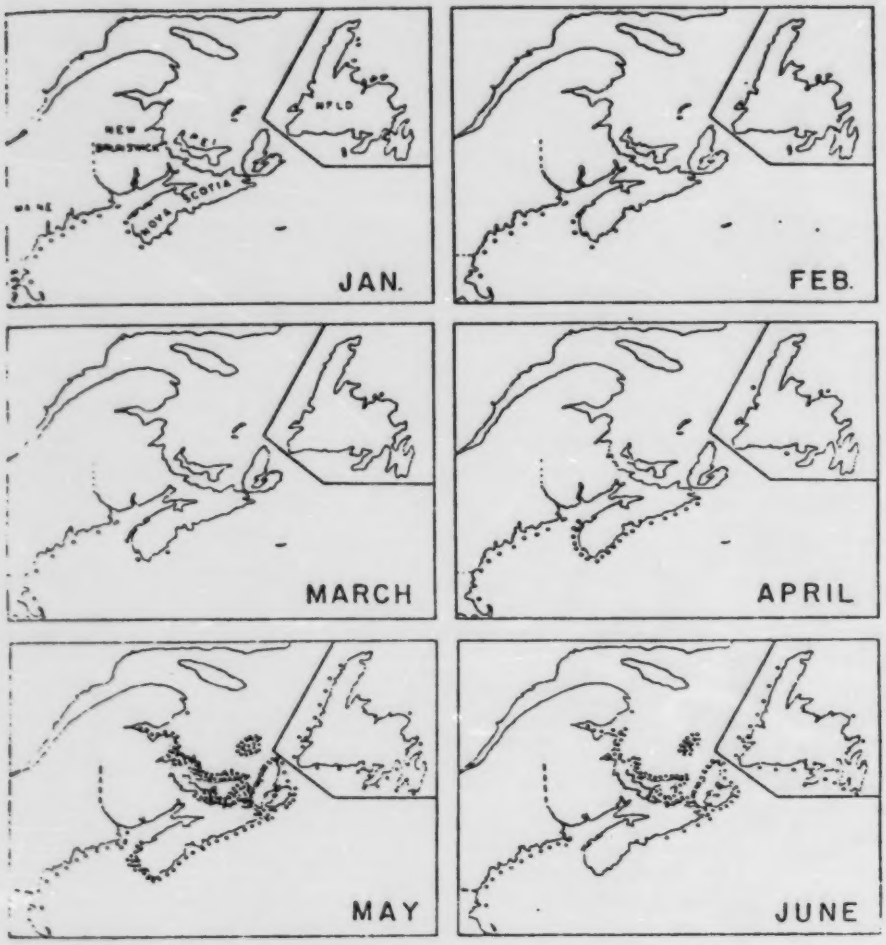
Typical Annual Lobster Catches Along the East Coast



Source: McLeese and Wilder, Lobster Storage and Equipment, Bulletin 147, Fisheries Research Board of Canada, 1964.

Diagram 3

Typical Lobster Catches by Month[1]

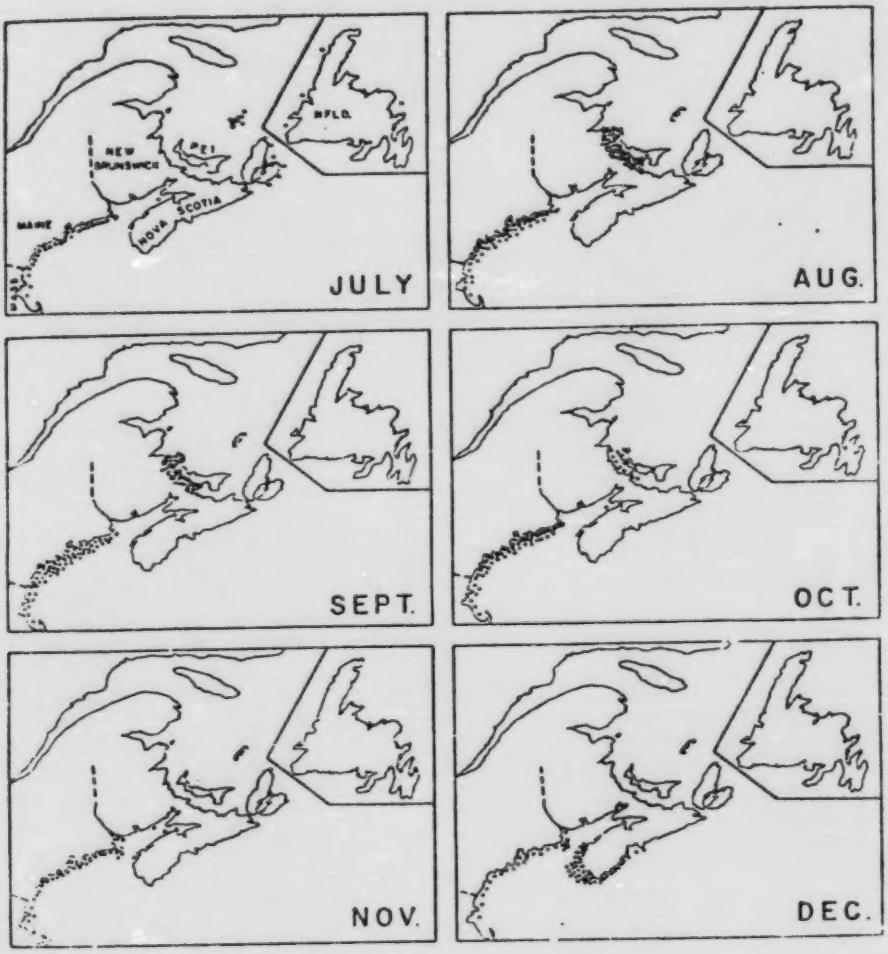


Each dot represents 100,000 lb.

[1]Data for last three years are available in data bank. See Appendix A.

Continued . . . .

Diagram 3 (Cont'd)



Each dot represents 100,000 lb.

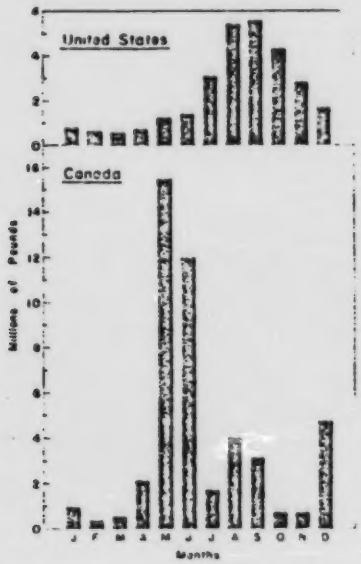
Source: McLeese and Wilder, 1964

lobster catches in District 4 in December. The additional effort in that district satisfies a surge in demand in New England around Christmas.

The above observations are highlighted in Chart 3.

Chart 3

Average Monthly Lobster Landings in Canada and the United States[1] 1956-1960



Source: McLeese and Wilder

[1]More recent data are presented in Charts 4 and 5.

From Chart 3 it is clear that the Canadian supply is larger than the American supply, which seems to follow a well-defined frequency distribution with the mode falling in October. There are three reasons for the shape of the American curve. Firstly, the lobsters in Maine are usually moulting or shedding in late June and early July. Because new-shelled lobsters have a lower market value, a lower fishing effort is expended at this time. Secondly, lobster fishing is a small boat operation and one that is difficult during the colder months. Thirdly, unlike the Canadian fisheries, the Americans do not have lobster seasons. What is clear from the Canadian data, is that the catches are the heaviest during May and June. The Newfoundland supply hits the market when Canadian supply is at its maximum.

Chart 4 on page 23 gives the Newfoundland supply as a portion of the total Canadian supply for the months of May and June.

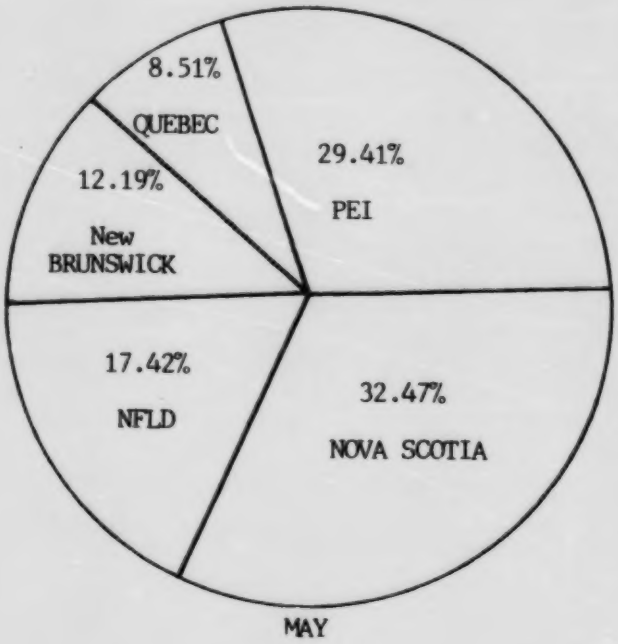
Chart 5 on page 24 shows the annual landings for the various Provinces and Maine.

Chart 6 on page 25 shows the landings for May and June by statistical district for Newfoundland for the period 1977-79. Those regions correspond to the districts outlined earlier.

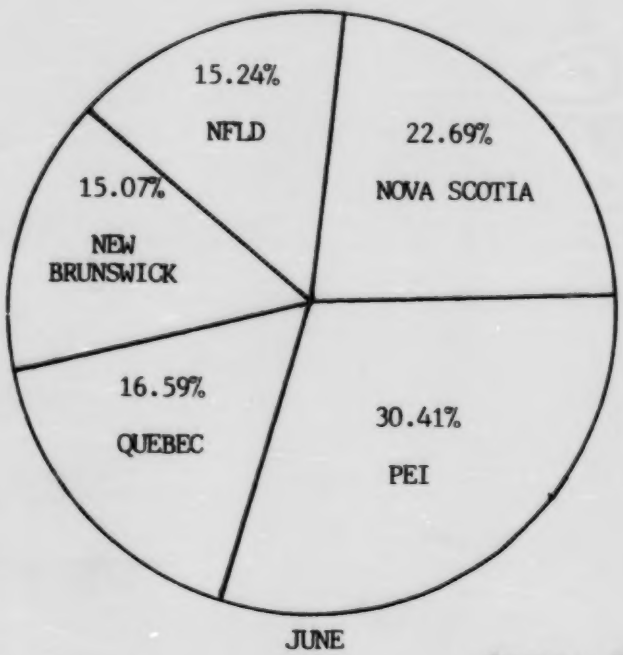
B. I. 3 Problems Involved in Collecting the Lobster Supply. The Newfoundland lobster catch is smaller than that of other provinces, and this catch is spread out over a wider geographic area. Often the areas in the province where the lobsters are caught are quite remote. This remoteness and a lower volume of catch result in the lobster being picked up by the fish processors from the fishermen less frequently,

Chart 4

Newfoundland Supply of Lobsters as a Portion of the Total Canadian Supply[1]



MAY



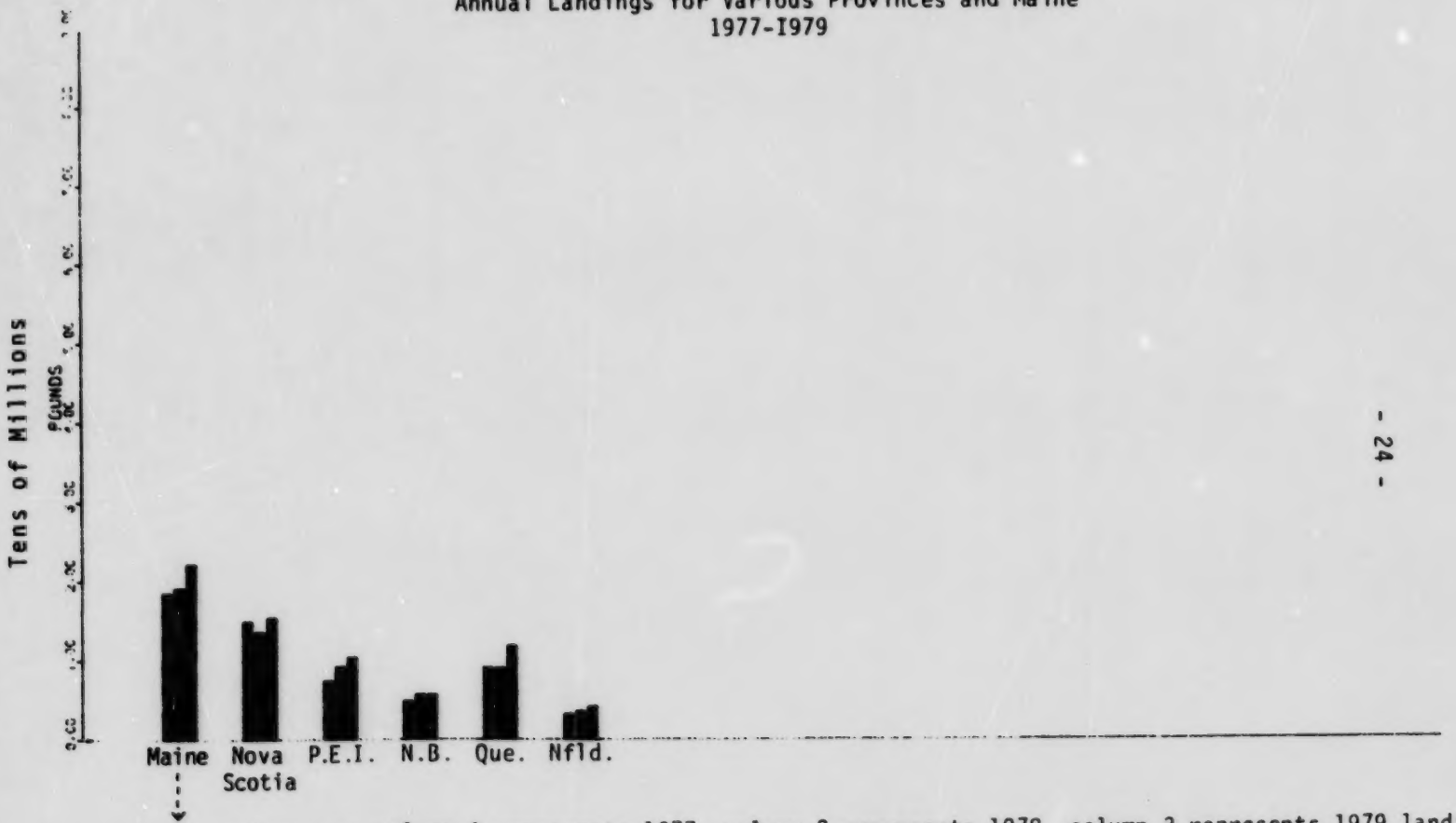
JUNE

Source: From data compiled by Environment Canada for this study.

[1]Averages During 1977-1979

Chart 5

Annual Landings for Various Provinces and Maine
1977-1979

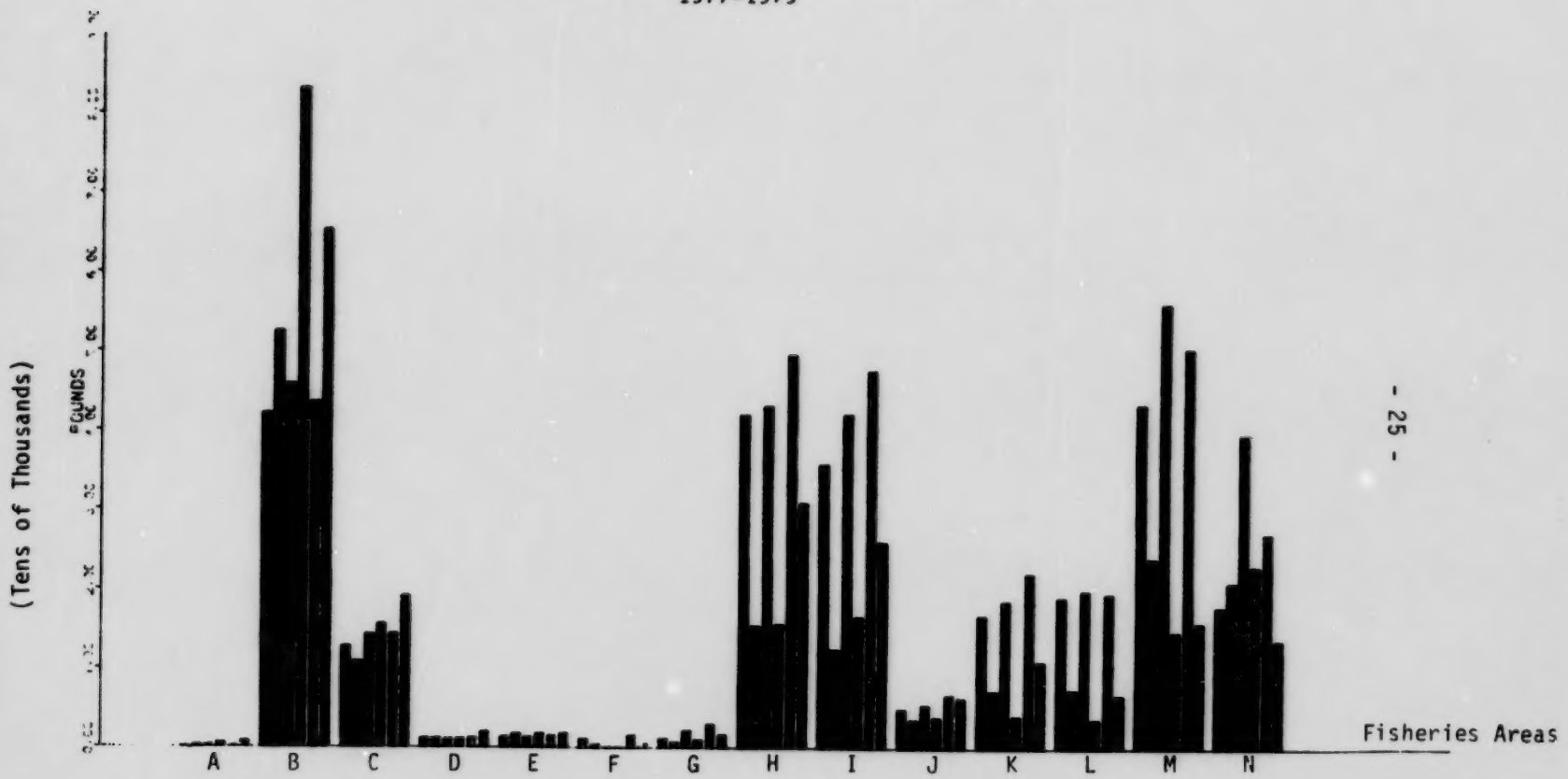


In each group, column 1 represents 1977, column 2 represents 1978, column 3 represents 1979 landings.

Sources: U.S. Dept. of Commerce, "Current Fisheries Statistics." Also, Data compiled for the study from Fisheries and Oceans, Canada.

Chart 6

Landings for May and June by Newfoundland Fisheries Areas[1]
1977-1979



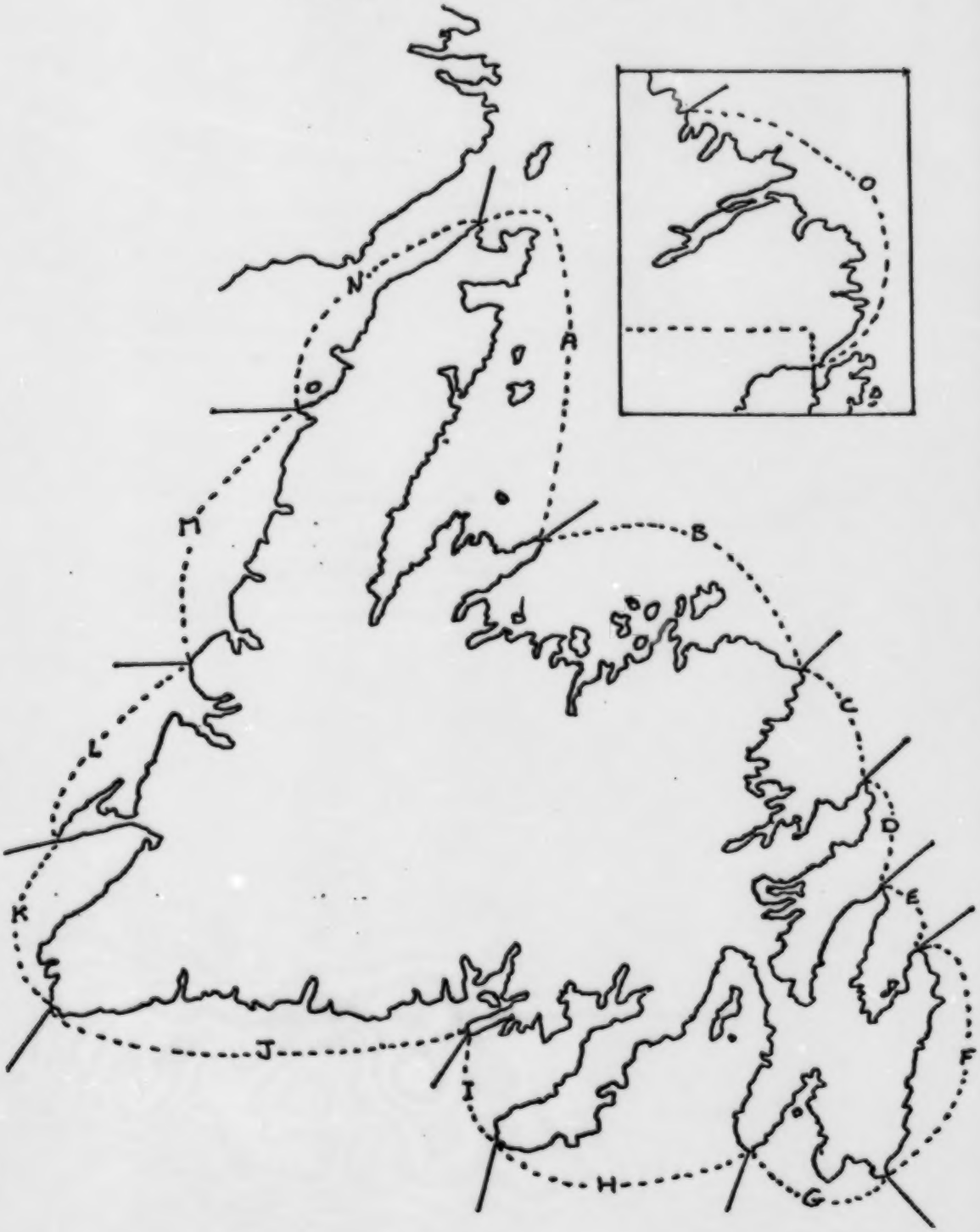
For each statistical district, columns 1 and 2 represent May and June 1977, respectively, columns 3 and 4 represent May and June 1978, and columns 5 and 6 represent May and June 1979.

Source: Unpublished Data, Fisheries and Oceans Canada

[1]See Diagram 4

Diagram 4

Newfoundland Sea Fisheries Areas



Continued . . . .

Diagram 4 (Cont'd)

A. Cape Norman inclusive to Cape St. John exclusive.
B. Cape St. John inclusive to Cape Freels inclusive.
C. Cape Freels exclusive to Cape Bonavista exclusive.
D. Cape Bonavista inclusive to Grate's Point exclusive.
E. Grate's Point inclusive to Cape St. Francis exclusive.
F. Cape St. Francis inclusive to Cape Race exclusive.
G. Cape Race inclusive to Cape St. Mary's exclusive.
H. Cape St. Mary's inclusive to Point Crewe exclusive.
I. Point Crewe inclusive to Pass Island inclusive.
J. Pass Island exclusive to Cape Ray inclusive.
K. Cape Ray exclusive to Cape St. George exclusive.
L. Cape St. George inclusive to Cape St. Gregory exclusive.
M. Cape St. Gregory inclusive to Point Riche inclusive.
N. Point Riche exclusive to Cape Norman exclusive.
O. Point St. Charles inclusive to Hopedale inclusive.

Source: Fisheries and Oceans, Canada.

perhaps weekly rather than daily. The lobsters must now be stored by the catchers. There is a potential for creating problems if the lobsters are not stored under ideal conditions.

As noted in the seminal work of McLeese and Wilder, water temperature (which also helps to determine the oxygen content) and the salinity of the water are both important in determining lobster survival. The Newfoundland lobster is acclimatized to certain water temperatures and water salinity. Catchers may hold the lobsters close to shore where temperatures may differ and the salinity of the water be different due to nearby rivers.

B. I. 4 Problems in Shipping Lobsters from the Primary Market to Higher Markets. Processors, for their part, have difficulties because of a lack of access to the main markets. The lobsters must be brought to major collection points, loaded on trucks, packed with salt and ice and shipped to Boston. Newfoundland processors must have good transportation and access to the ferries.

Further, provincial processors are not as able to take advantage of direct air shipments to parts of North America and Europe as are their counterparts in other provinces and states. Newfoundland processors are plagued by flight delays and cancellations. If flights are delayed for a couple of days or a week, the processors must deal with a bewildered, often frustrated, truck driver who sees his freight literally rotting on him. The anticipated and sometimes realized difficulties are enough to discourage the general processor from trying to ship to Europe. As a result of action taken by processors in

Nova Scotia, Air Canada has made concerted efforts to improve its handling of live seafood products and to offer extremely competitive freight rates.

B. I. 5 Exports from Primary Markets. Chart 7 on the following page gives an indication of exports of Canadian lobsters to the United States on an annual basis relative to the United States supply. It is clear from the chart that Canadian exports comprise less than 30 percent of the total U.S. supply. Thus, Canadian exports do not dominate the U.S. market.

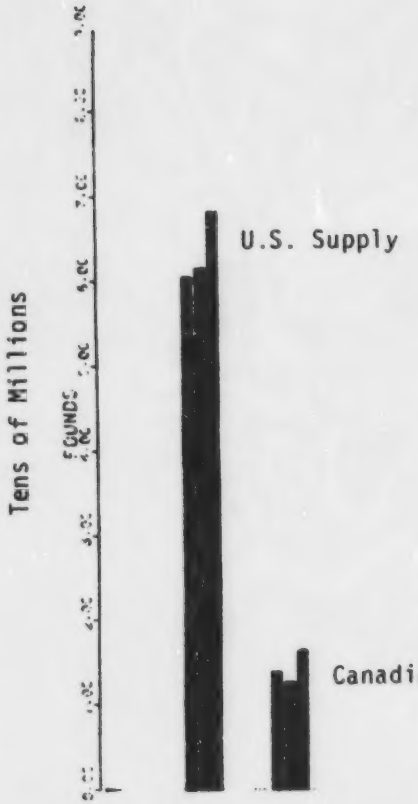
Table 2 shows the destination of Canadian lobster exports. While the forecast for 1981 and 1985 was made by Fisheries and Oceans, and the Department of Industry Trade and Commerce, the study team feels that it underestimates the potential of the European market as the estimates do not take into consideration the recent reduction in transportation costs. Some Nova Scotia lobster companies have been particularly successful in entering the European Market.

B. I. 6 Prices in the Primary Markets. In every market the mechanism which clears the market is the price for the product. Hence, if there is excess supply, prices will fall; if, on the other hand, there is an excess demand, prices will rise. If the market can be characterized as being competitive, then it is the forces of supply and demand together which set the price.

In this section of the study we will examine the prices which exist in the various primary markets for lobster over the past three years.

Chart 7

Exports of Canadian Lobster to the U.S. -
Annual Basis Relative to the U.S. Supply
1977-1979



In each group, column 1 represents 1977, column 2 represents 1978, column 3 represents 1979.

Sources: Statistics Canada, Bulletin 65-044, 1979.
Canadian Exports of Fishery Products, Fisheries and Oceans, 1977-78.
"Current Fisheries Statistics," U.S. Dept. of Commerce.

Table 2

Canadian Exports of Lobster
(in Shell, Fresh or Frozen)

Metric Tons

	Actual			Potential	
	1974	1976	1978	1981	1985
U. S. A.	6,604	6,648	5,742	7,000	8,000
Western Europe/EEC	593	609	1,765	1,895	2,290
Western Europe/Non EEC	28	58	216	182	217
Japan	19	18	194	200	250
Far East	1	-	3	+	+
Caribbean	-	-	-	+	+
Other	6	8	11	+	+
Total	7,251	7,340	7,931	9,277	10,757

Source: Fisheries and Oceans, Industry Trade and Commerce, Annex to the Worldwide Fisheries Marketing Study: Prospects to 1985, Ottawa, 1979.

Table 3 on the following page provides a matrix of the prices being paid to fishermen by province on a monthly basis for the past three years.

One might expect that larger lobsters would command a higher price. A difficulty with the data collected for the present study was that lobsters are not sorted according to size. Market size does, however, become implicitly important in the dealers' market and explicitly important at the wholesale level (see Chart 1). It is clear that the market tends to place a premium on larger lobsters up to a maximum of three pounds and then the price tends to decline. It may be that the prices paid to Western Nova Scotia fishermen are higher than those prices paid to Newfoundland fishermen in part because of differences in the size distribution of the catch.

Differences in the prices would also be due, in part, to differences in transportation costs and shrinkage. Under competitive market conditions, the costs should be absorbed partially by the dealers and partially by the fishermen.

It is true that if the shrinkage were reduced, the price of Newfoundland lobsters would rise, since the dealers would have lower shrinkage costs to absorb. Thus, the prices received by Newfoundland lobster fishermen would rise if shipping and handling conditions for their lobsters improved.

It has also been noted by some observers that Newfoundland lobsters have a harder shell and whiter meat than Nova Scotia lobsters. While Newfoundland lobsters may have a whiter meat this fact has not

Table 3

Prices Paid to Lobster Fishermen in the Atlantic Provinces
$

		Newfoundland	P.E.I.	Nova Scotia	New Brunswick	Quebec
1977	Jan.	0	0	2.902	2.865	0
	Feb.	0	0	2.548	2.708	0
	Mar.	0	0	2.161	2.144	0
	Apr.	1.073	1.974	1.766	1.772	0
	May	1.117	1.001	1.373	1.153	1.242
	June	1.153	1.073	1.276	1.188	1.097
	July	1.172	1.096	1.427	1.171	1.077
	Aug.	0	1.053	1.292	1.066	1.689
	Sept.	0	1.099	1.420	1.136	0
	Oct.	0	1.118	1.877	1.087	0
	Nov.	0	0	2.103	2.098	0
	Dec.	0	0	2.530	2.513	0
1978	Jan.	0	0	2.679	2.702	0
	Feb.	0	0	2.337	2.076	0
	Mar.	0	0	2.477	2.885	0
	Apr.	1.414	1.340	2.398	2.328	0
	May	1.506	1.330	1.572	1.359	1.430
	June	1.447	1.350	1.443	1.391	1.266
	July	1.480	1.367	1.536	1.405	1.383
	Aug.	0	1.418	1.350	1.321	1.593
	Sept.	0	1.261	1.326	1.277	0
	Oct.	0	1.285	2.190	1.289	0
	Nov.	0	0	2.344	2.502	0
	Dec.	0	0	2.996	2.833	0
1979	Jan.	0	0	3.061	2.819	0
	Feb.	0	0	3.099	2.391	0
	Mar.	0	1.292	3.256	2.253	0
	Apr.	1.524	1.398	2.175	1.967	0
	May	1.381	1.339	1.549	1.412	1.587
	June	1.327	1.334	1.453	1.425	1.513
	July	1.344	1.258	1.621	1.479	1.577
	Aug.	0	1.201	1.740	1.221	1.034
	Sept.	0	1.221	1.713	1.228	0
	Oct.	0	1.187	2.128	1.263	0
	Nov.	0	0	1.893	2.116	0
	Dec.	0	0	2.218	2.089	0

Source: Calculated Averages from unpublished Environment Canada data.

been substantiated by the study team in discussion with lobster biologists. In any event, the market does not differentiate at any level on the whiteness of meat. While harder shell lobsters are more desirable, Newfoundland lobsters possess the other attribute of higher rates of mortality due to a variety of causes.

It is the case that the industry generally distinguishes between small ("canners") and market lobsters. In some areas "jumbo" lobsters are landed. "Canners" are those from the legal limit up to .9 lb. "Market" lobsters include those over .9 lb. up to 3 lb. Within this category there are also two sub-categories: "chickens," which are small market-size, in the .9 to 1 lb. range; and "choice" which are in the 1.7 to 1.9 lb. range. "Choice" lobsters command the highest prices. "Jumbo" lobsters are in the 3 to 3.5 lb. range. Prices for them tend to be lower than for "market" lobsters, but higher than for "canners."

In the Maritimes there are two distinct prices for these two grades, with canners receiving substantially less (about $1.20 per pound in June of 1980). Table 4 shows the price differential between market lobsters and canners.

Since lobsters are not graded in Newfoundland, Newfoundland fishermen are paid a single price for the lobsters. One would predict that because of the presence of canners in the Newfoundland lobster catch, the Newfoundland primary market price would be lower than that in Nova Scotia.

The NFFAWU proposal that lobsters should be graded is an interesting concept. One suspects that some grading occurs by the dealers because wholesalers are interested in sizes. The suggestion merits discussion with the Boston dealers.

Table 4

Grading of Nova Scotia Lobsters, 1979

	CLASS 1 (Canners)			CLASS 3 (Market)		
	lbs.	Landed Value $	Price Per Pound	lbs.	Landed Value $	Price Per Pound
J	5,141	15,717	3.06	335,090	1,025,824	3.06
F	0	0	-	25,379	78,661	3.10
M	0	0	-	200,218	653,679	3.26
A	51,392	95,009	1.85	1,549,134	3,304,418	2.13
M	1,829,174	2,241,871	1.23	3,648,456	5,701,803	1.56
J	1,200,084	1,506,966	1.26	1,695,918	2,646,548	1.56
J	78,315	104,277	1.33	288,941	491,087	1.70
A	1,220	1,528	1.25	8,681	15,696	1.81
S	1,271	1,823	1.43	6,621	11,695	1.77
O	7,705	10,207	1.32	61,134	127,944	2.09
N	201,086	385,655	1.92	436,359	858,453	1.97
D	1,917,491	4,189,692	2.18	659,572	1,300,044	1.97

Source: Calculated from unpublished Environment Canada compiled for the study.

B. I. 7 Seasonality in Lobster Prices. Table 5 outlines the seasonal adjustment factors associated with the prices paid to fishermen.

Newfoundland is not included in Table 5 since lobsters are not caught throughout the year whereas they are in Nova Scotia and Maine.

The average price per year would be represented by a 1.00. The figure of 1.43, for January in Nova Scotia, has the interpretation that the ex-vessel price in that month is 1.43 times greater than the average price in Nova Scotia during the year. The June price in Nova Scotia, on the other hand, is lower than the average price. What is important is that the prices in May and June are lower than at other times of the year, and this is due simply to an abundance of supply at the primary level coupled with moderate demand in the market at the retail level. Newfoundland lobster enter the market at a time when prices are low and the supply helps to determine the low prices.

B. I. 8 Pounding Lobsters to Stabilize Prices. The observation of the section B. I. 7 implies that it would be better to spread the lobster supply to the dealers' market more evenly and thus stabilize prices. This is exactly what pounding attempts to do. However, there are problems associated with pounding lobsters. This is a relatively costly business because of the mortality which can occur, because of the cannabalistic nature of the lobsters, and the need to feed them if held in storage over a long period of time. Further, very warm temperatures or heavy rains, by affecting the oxygen content and the salinity of the water, can greatly increase lobster mortality. A problem with pounding in Canada is that a desirable time to release Canadian pounded

Table 5

Seasonal Adjustment Factors Associated with Prices Paid to Lobster Fishermen in the 1977-1979 Period in Various Areas

	January	February	March	April	May	June	July	August	September	October	November	December
Nova Scotia	1.47	1.34	1.40	1.13	0.77	0.71	0.78	0.69	0.71	1.03	1.12	1.38
Canada	1 54	1.43	1.51	1.11	0.77	0.75	0.78	0.67	0.67	0.72	1.23	1.49
Maine	1.35	1.41	1.51	1.25	0.94	0.97	0.84	0.74	0.69	0.72	0.83	1.19

Source: Calculated using a seasonal adjustment package on TSP.

lobsters onto the American market would be September or October, but this is exactly the period in which lobster catches in the United States are at their peak. In interviews, Boston dealers pointed out that problems with pounding in 1979 forced many Nova Scotia processors to unload their lobsters on the Boston market in August and September. One result was a reduction in the local ex-vessel prices. Such competition by Canadians is especially unwelcome by fishermen in New England.

One processor in Newfoundland estimated the poundage charges to be about 50¢ per pound of lobster[1]. If this were true, then the lobsters must be pounded for a long period of time, perhaps 6 months, in order to enter the dealers' market at a time when prices have risen sufficiently.

Pounded lobsters could be used, in part, to satisfy local demand. Many people from the United States and central Canada come to the Atlantic Provinces in the often frustrated hopes of consuming fresh seafoods including lobster. Prince Edward Island has developed lobster dinners to a fine art. With the prospect of an oil boom and the accompanying economic expansion, this type of trade could be developed in Newfoundland. Lobsters could be pounded on the Island to carry the trade over the tourist season. Lobsters could also be pounded for sale on the European market.

B. I. 9 Prices Paid to Lobster Catchers in Europe. While we have compared the prices paid to Newfoundland fishermen with those in other areas of North America, we have not compared them to the prices paid

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[1]No time frame was specified by the processor.

to European fishermen. Generally the prices paid to lobster catchers in Scotland are far above those paid to Newfoundland fishermen. Table 6 shows prices paid to catchers over part of 1980.

Table 6

Prices Paid to Lobster Catchers in Europe
(Ports Markets) 1980 per lb.

Date	Dublin		Eyemouth	
	£	$ (Can.)	£	$ (Can.)
May 7	£3	$8.10		
May 13	£1/£2.50	$2.69/6.72	£2.30	$6.18
May 20	£1/£2.50	$2.70/6.74		
May 28	£1.25/£2.75	$3.42/7.52	£1.80	$4.92
June 3	£1/£2.90	$2.70/7.84		
June 9	£1.50/£2.50	$4.36/6.73	£1.70	$4.57
June 17			£1.80	$4.83
June 24			£1.80	$4.84
July 1				
July 8	£1/£2	$2.71/5.41	£1.80	$4.87

Source: "Fishing News"

B. I. 10 Local Primary Market Prices. The data presented in Tables 7 a, b, c, and d on the following pages represent the prices paid to fishermen at various centres in Nova Scotia and Newfoundland.

Table 7a

Prices Paid to Lobster Fishermen, 1977
Canadian $

Date	Nova Scotia			Newfoundland				Comparison between prices paid to fishermen in sample communities	
	North Sydney	Yarmouth	Petit De Grat	Port Aux Choix	Bonavista	Twillingate	Valleyfield	North Sydney vs. Port Aux Choix	North Sydney vs. Bonavista
May 11	-	-	-	1.20	-	-	-	-	-
May 18	1.00 1.25	1.60	-	1.26	-	-	-	(.01- .26)	-
May 25	-	1.60	-	1.26	-	-	-	-	-
June 1	1.55	-	-	1.26	-	-	-	.29	-
June 8	-	-	-	1.26	-	-	-	-	-
June 15	1.50	-	-	1.30	1.15	-	-	.20	.35
June 22	-	-	-	1.30	1.15	-	-	-	-
June 29	1.50	-	-	1.30	1.15	-	-	.20	.35
July 7	1.50	-	-	1.30	1.15	-	-	.20	.35
July 13	1.75	-	-	1.30	1.25	-	-	.45	.50

Source: Fishing Industry Advisory Board

Table 7b

Prices Paid to Lobster Fishermen, 1978
Canadian $

Date	Nova Scotia			Newfoundland				Comparison between prices paid to fishermen in sample communities	
	North Sydney	Yarmouth	Petit De Grat	Port Aux Choix	Bonavista	Twillingate	Valleyfield	North Sydney vs. Port Aux Choix	North Sydney vs. Bonavista
May 24	-	2.00	-	-	-	1.65	1.65	-	-
May 31	1.70	2.00	1.80	1.82	-	1.65	1.65	-	-
June 1	-	-	-	-	1.65	1.65	-	-	-
June 14	1.75	-	1.85	-	1.65	1.65	-	-	.10
June 21	-	-	2.00	-	1.65	1.65	-	-	-
June 28 - July 5	1.45-1.79	-	1.45-1.70	-	1.65	1.65	-	-	(.20)-.14
July 12	-	-	-	-	1.65	1.65	-	-	-
July 19	1.80	-	-	-	1.65	1.65	-	-	.15

Source: Fishing Industry Advisory Board

Table 7c

Prices Paid to Lobster Fishermen, 1979
Canadian $

Date	Nova Scotia		Newfoundland					Comparison between prices paid to fishermen in sample communities	
	North Sydney	Yarmouth	Petit De Grat	Port Aux Choix	Bonavista	Twillingate	Valleyfield	North Sydney vs. Port Aux Choix	North Sydney vs. Bonavista
May 16	-	2.00	2.00	1.70	-	-	-	-	-
May 23	1.80	2.00	2.00	1.70	.75	-	-	.10	-
May 30	-	2.00	2.00	1.50-1.70	.85	-	-	-	-
June 6	-	-	2.00	1.50-1.70	1.50	1.50	1.50	-	-
June 13	1.75-1.85	-	2.00	1.50-1.70	1.50	1.50	1.50	.05-.35	.25-.35
June 20	1.75	-	1.75-2.00	1.50-1.70	1.50	1.50	1.50	.05-.25	.25
June 27	1.80	-	2.00	1.50-1.70	1.50	1.50	1.50	.10-.30	.30
July 4	1.75	-	-	1.50-1.70	1.50	1.50	1.50	.05-.25	.25
July 11	1.80	-	1.50-2.00	1.50-1.70	1.50	1.50	1.50	.10-.30	.30
July 18	-	-	-	1.50-1.70	1.50	1.50	1.50	-	-
July 25	-	-	-	1.50-1.70	1.50	1.50	1.50	-	-

Source: Fishing Industry Advisory Board

Table 7d

Prices Paid to Maritime Lobster Fishermen, 1980
Canadian $

	Yarmouth	North Sydney		Petit De Grat		Grand Manan		Shippegan		Souris	
SAMPLE DATE	MKT.[1]	MKT.	CANNER	MKT.	JUMBO	MKT.	JUMBO	LARGE MKT.	SMALL	MKT.	CANNERS
Apr. 9	3.25										
Apr. 16	3.25					3.50					
Apr. 23	2.50										
Apr. 30	2.50					3.50					
May 7	2.00					2.50					
May 14											
May 21											
May 28	2.00	1.75	1.20	2.00	1.50	2.25		1.75	1.20	1.75	1.20
June 4		1.75	1.20	2.00	1.50	2.25					
June 11		1.75	1.20	2.00	1.50	2.25	1.50	1.75	1.20		
June 18		1.85	1.20	2.00	1.50	2.25	1.50	1.75	1.20	1.75	1.20-1.30
June 25		2.00	1.20	2.00	1.50	2.25	1.50	1.75	1.20	1.75	1.20-1.30
July 2		2.00	1.20	2.00	1.50					1.75	1.20-1.30

Source: Fishing Industry Advisory Board

[1]See p. 35 for explanation of the classifications.

TABLE 7e
PRICES PAID TO NEWFOUNDLAND LOBSTER FISHERMEN, 1980
CANADIAN $

Region I - Southwest Coast from Francois to Cox's Cove

	HIGH	LOW
Cox's Cove	$1.90	$1.75
York Harbour	$1.85	$1.75
Stephenville	$1.96	$1.75
Heatherton	$1.90	$1.75
McKays	$1.85	$1.75
Marches Point	$1.85	$1.75
Highlands	$2.00	$1.75
Black Duck Brook	$1.85	$1.75

Region II - The Great Northern Peninsula from Trout River to Beaches, W.B.

	HIGH	LOW
Trout River	$2.00	$1.75
Woody Point	$2.00	$1.75
Norris Point	$2.00	$1.70
Rocky Harbour	$2.10	$1.70
Sally's Cove	$2.10	$1.70
Cowhead	$2.06	$1.70
Parson's Pond	$2.15	$1.70
Daniel's Harbour	$2.15	$1.70
River of Ponds	$2.15	$1.75
Port Saunders	$2.25	$1.70
Port aux Choix	$2.15	$1.70
Castor River	$2.15	$1.70
Reefs Harbour	$2.00	$1.70

Region III - Purbeck's Cove, W.B. to Clarkes Head, Gander Bay

	HIGH	LOW
Triton	$1.80	$1.75
Lewisporte	$1.80	$1.75
Comfort Cove	$1.85	$1.70
Cottle's Island	$1.90	$1.75
Fogo Island	$1.80	$1.80

Region IV - Main Point, Gander East to Chapel Arm, T.B.

	HIGH	LOW
Carmanville	$1.95	$1.75
Newtown	$1.90	$1.70
Valleyfield	$2.00	$1.80
Salvage	$1.90	$1.70
Sweet Bay	$1.80	$1.70
Summerville	$1.80	$1.70
King's Cove	$1.80	$1.75
Chance Cove	$2.00	$1.95

Region V - Avalon Peninsula from Dildo, T.B. to Long Harbour, P.B.

	HIGH	LOW
O'Donnells	$2.00	$1.80
Ship Hr.	$1.85	$1.80
Placentia	$2.00	$1.95
Foxtrap	$2.00	$2.00
Bay de Verde	$1.70	$1.70

Region VI - South Coast from Fairhaven, P.B. to McCallum, H.B.

	HIGH	LOW
Fairhaven	$2.00	$1.85
North Hr.	$1.80	$1.80
St. Bernards	$2.00	$1.75
Arnolds Cove	$1.85	$1.75
Petit Forte	$1.80	$1.75
Hermitage	$1.80	$1.70
Harbour Breton	$1.80	$1.75
English Hr. West	$1.85	$1.80
Garnish and Frenchman's Cove	$1.90	$1.75

The data show that Yarmouth fishermen are paid more than North Sydney fishermen who in turn are paid more than Port Au Choix fishermen. Differences in prices are probably due to differences in transportation costs. In addition, Yarmouth processors are dealing in such a volume that they have "dedicated" truck drivers. These drivers work for a processor and handle only lobsters. Their skills and dedication tend to be higher than these drivers who handle lobsters only occasionally. The same appears to be true for the packers. Packing lobsters is a very demanding task. Poor packing often results in damage which is not immediately apparent. For example, dropping the lobsters causes the spines on a lobster to puncture other lobsters and may cause diseases to occur.

Another factor which can affect the price is associated with the proximity of Yarmouth processors to ferries to the U.S. and international airport facilities (Yarmouth and Halifax). Thus, they can direct their shipments to that market which is paying the highest price. Some Yarmouth processors maintain almost hourly contact with major market centres in North America and Europe. This would imply that they could try to negotiate a better price for their product, although the scope for this type of action is relatively limited given the nature of the market. The exact quantitative importance of each of those factors, however, is impossible to assess.

One other observation can be made from the preceding tables. Prices elsewhere on the Island tend to be lower than those paid on the Great Northern Peninsula. One may attribute this difference to greater

distances from the markets as well as from the ferry to Nova Scotia, and a smaller concentration of lobsters.

Data collected by the FIAB shown in Tables 7a-7d demonstrate that there was a wide variation in the prices paid to fishermen in the Northern Peninsula, particularly during May. At the dealers' market in Boston the spread of prices paid is far less than may occur at this primary market level.

If the primary market were one characterized by perfect competition, perfect knowledge, and instantaneous adjustment, then only one price should prevail. If on the other hand, the processors, agents, and wholesalers were oligopsonists (that is, if prices were determined by a few buyers), then one would expect some collusion but still one price, that is, the lowest possible price would prevail. The fact that we have a range of prices indicates nothing about competition or the apparent lack of it. What it does say is that somehow there is imperfect information and/or that the market is slow to adjust. It is probably the case that both those factors are present. Fishermen have probably built up a relationship over the years with a particular processor or agent and may sell more species than just lobsters to the processor. It will only be rather reluctantly that a fisherman will change from one processor to another buyer. One possible way to achieve a more uniform price would be an official agency to publish or announce, on the radio, the highest prices paid for the lobsters in particular communities. This action would probably result in a higher income for fishermen as buyers would feel compelled to pay the higher price.

B. I. 11 The Suggested Minimum Price[1]. Early in 1980 the Fishermen's Union made representations to the Minister of Fisheries concerning ways and means to ensure adequate lobster prices. Before the 1980 season commenced, the Minister, after consultation with representatives of NFFAWU, released a statement which suggested that fishermen be paid at least $1.70 per pound for their lobster. For the purposes of this study, it is assumed that the price actually quoted is the lowest price actually paid. The question can be asked what role did this suggested minimum price play in the market place. From FIAB data it is clear that at no time was less than $1.70 paid for lobster in the Province in 1980. However, the price of $1.70 was often paid, particularly in Region 2 (the Great Northern Peninsula). In many instances more than $1.70 was offered soon after opening day. This indicates that there was upward pressure on the market which manifested itself in steadily rising prices over May and June. It is interesting to note that the prices outside the Province have been above the $1.70 price and, therefore, we can assume that the suggested price did not, in the long run, influence the natural market price.

An examination of the FIAB data for 1980 (see Table 7E) relating to Region 2 (the Great Northern Peninsula) indicates a rather disturbing possibility with respect to the suggested price floor. At the beginning of the season the price in Boston was relatively high compared to previous years and the price Yarmouth, Nova Scotia fishermen received for their lobster was high. One would have expected the initial price to Newfoundland fishermen to be relatively higher than previous years. Over the past

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1 The price data discussed in this section were gathered during 1979-80 by the FIAB under instructions from the Minister.

three years, the ratio of the Port Au Choix price to the Yarmouth price has been in the .75 to .85 range. What one finds this year is that the ratio was about .70. In other words, based on what Yarmouth catchers were receiving, one would have expected the April opening price for Newfoundland lobsters on the Great Northern Peninsula to have been between $1.85 and $2.10 per pound. However, the price was about $1.75 per pound. What may have happened is that the suggested price floor was misinterpreted as a target price or market clearing price. The initial prices offered to fishermen were probably below what they might have received had no suggestion been made. This theory is further substantiated by the fact that some processors in late May were still offering $1.70 per pound in Port Au Choix while Boston dealers or their agents were paying $2.10 per pound. This spread is relatively large, and eventually market forces prevailed and the $1.70 price was abandoned. By early July the price spread at Port Au Choix was 15¢. Thus, there is a high probability that the suggested price of $1.70 was misinterpreted as a target price, with the result that the prices paid to fishermen were below that which they would have ordinarily received.

B. I. 12 Competitive Market Conditions. In Section A. II. it was pointed out that this study would attempt to evaluate market prices by examining the structure of the markets which generated these prices. Competitive markets will produce prices which are efficient and consistent with community welfare maximization. The purpose of this section, therefore, is to examine the structure of the primary market.

Most processors will point out that with approximately fifteen buyers operating in their districts, there is serious competition. From the point of view of the fisherman, however, it is the number of buyers he could actually sell to in his community that is relevant. In general, the number of buyers in any one community may only be two or three. In many instances it is only one. Even a couple of buyers may be enough to produce competition. In addition, entry into the market is unrestricted on the buyer side. If a buyer offered very low prices to the fishermen, then there is always the possibility of other buyers moving into the area. On the supply side entry is limited by the number of licences. It is possible that licences can be used to increase the incomes of fishermen simply by restricting the number of licences outstanding. Therefore, while the primary market does not correspond to the "ideal" competitive market, it is essentially competitive in so far as we do not feel that the fishermen can set market prices.

It is clear that competition can raise or lower the prevailing market price. The example of the prices paid to lobster fishermen in 1980 on the Great Northern Peninsula is a good example. In this instance, competition appears to have increased the prices in the primary market.

B. I. 13 Conclusions.

1) The primary market is affected by the supplies available. It is a very seasonal market, and the prices paid to fishermen reflect this. The Newfoundland portion of the overall primary market is small, but it plays an important role in the May-July period. Unfortunately, the supply from Newfoundland comes at a time when other provinces of Canada are also supplying the market. As

Newfoundland exports most of its lobsters, the markets for lobsters are largely outside provincial borders. In supplying those markets, Newfoundland fishermen and processors compete with fishermen and processors all along the Atlantic coast. Thus, with large supplies of lobster on the market, the prices paid to fishermen are relatively low.

2) There are some problems associated with maintaining the quality of the lobsters in collecting the supply and shipping the supply to higher markets. Prices paid to Newfoundland lobster catchers which are lower than elsewhere seem to result from greater shrinkage of the catch, greater transportation costs, and lack of grading the catch at the primary market level.

3) There is a seasonal fluctuation in overall prices for lobsters which is an important factor in determining the prices paid for Newfoundland lobster.

4) Prices paid to lobster catchers in Scotland and Ireland are substantially higher than in Canada.

5) The suggested minimum price for lobsters in effect for 1980 may have been misinterpreted as a "target price," and may have caused prices paid to fishermen to be lower than the market would have set.

6) The primary market in the province appears to be competitive, and in 1980 the competition raised prices in at least one region. Competition is also thought to result in price differentials in different regions in the province.

B. II. The Dealers' Market

B. II. 1 New and Traditional Markets. The study team has identified two major dealers' (i.e. shippers) markets. These are the Boston market area and the Billingsgate Market in the United Kingdom. Most of the Newfoundland lobster are traded in the Boston market.

Newfoundlanders have not traditionally considered the Billingsgate Market to be important. It is likely that this situation will change drastically in the forthcoming years. The reason for this change is the relatively high prices paid in Europe. Table 8 shows Billingsgate (dealers' market) prices for part of 1980. There is evidence that shippers in other areas are already interested in the European market. A report to the Nova Scotia Department of Fisheries has the following statement: "The European market, rather than the Boston market, now determines the price paid for the fishermen's lobsters, at least during the winter season.[1]"

One might ask why are not all the lobsters shipped to Europe? Part of the explanation lies in the difficulties processors, particularly in Newfoundland, have in getting their lobsters onto a plane. Another difficulty has been the high airfreight and lack of proper handling facilities. This situation has recently changed for the better. Under a new seafood commodities arrangement, the freight rate from St. John's to London is 44¢ per pound for shipments of 4,400 pounds or more. The

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[1] N.S. Dept. of Fisheries, "Marketing of Fresh Nova Scotian Seafood in Western Europe: Air Requirements," January 1979, p. 15.

Table 8

Dealers Market Lobster Prices in Europe 1980 per lb.

Date	Billingsgate Market £	Canadian $
May 7	Selected £3/£3.40	8.10/9.18
	Unsorted £2/£2.60	5.40/7.10
May 13	Selected £3/£3.40	8.07/9.14
	Unsorted £2.50/£3	6.72/8.07
May 20	Selected £2.80/£3.20	7.55/8.63
	Unsorted £2/£2.60	5.39/7.01
May 28	Selected £2/£2.50	5.47/6.83
	Unsorted £1.50/£2.00	4.10/5.47
June 3	Selected £2.60/£3	7.03/8.11
	Unsorted £2/£2.50	5.40/6.76
June 9	Selected £2.20/£2.60	5.92/7.00
	Unsorted £1.75/£2.30	4.71/6.19
June 17	Selected £2.30/£2.60	6.17/6.98
	Unsorted £1.75/£2.20	4.70/5.91
June 24	Selected £2/£2.25	5.38/6.05
	Unsorted £1.70/£1.75	4.57/4.70
July 1	Selected £2/£2.40	5.41/6.49
	Unsorted £1.50/£2	4.06/5.41
July 8	Selected £2.60	7.04
	Unsorted £2.20	5.96

Source: "Fishing News"

shipments go to Halifax and can be stored in large cooler rooms. Difficulties could arise if freighter space is not available.

In addition to the problems on route, there are problems which can arise at the final destination. Proper holding tanks and water conditions must be maintained by the dealer in Europe or the United States.

Some companies have obviously found it profitable to sell in Europe as some 75,000 pounds a month are being shipped from Halifax to Paris and Amsterdam. The Manchester Guardian of May 29, 1980 pointed out that live lobsters from Canada were being sold for less than half the price British inshore fishermen were getting for their own catches in 1979. It would seem reasonable, perhaps even prudent, to raise the dealers' price in Billingsgate for Canadian lobster. Higher prices could then be passed on to fishermen. To the extent that the Newfoundland lobster trade can be diverted from the Boston lobster market to the European market, then higher prices to fishermen should prevail.

Table 9 provides information on the air freight charges. The prices are less than are enjoyed by American dealers for comparable distances. The result is a competitive advantage to Canadian dealers even in the markets of the mid-west and western United States.

B. II. 2 The Boston Market. As already noted, the Boston market is most important for sales of Newfoundland lobsters.

The Boston shippers' or dealers' market appears to be fairly competitive. On the demand side of the market are the Boston dealers

Table 9

Air Canada Air Freight Charges
Under the
Seafood Commodity Agreement
(from St. John's)

	More Than	Price Per lb.
Toronto	440 lb.	$.225
Montreal	440 lb.	$.21
Los Angeles	2,200 lbs.	$.22
London	4,400 lbs.	$.44
Paris	4,400 lbs.	$.49
Frankfurt	4,400 lbs.	$.49

Source: Air Canada Cargo Services

(see Chart 1, p. 8). Their demand is a derived demand ultimately dependent upon the preferences of the consumers. On the supply side are processors or catchers.

The dealer market is not a classic perfectly competitive market. There is not an auctioneer in Boston who establishes the price every morning. Processors or catchers do tend to deal with one dealer. They establish a relationship with the dealer and do not easily switch from one dealer to another. However, changes are possible, and do in fact occur, so there is an element of competition.

The product being dealt with in the dealers' market, the lobster, is undifferentiated, that is, one lobster is much the same as any other.

An undifferentiated product is a theoretical requirement for perfect competition. Dealers can differentiate, however, in the services they offer.

Economic theory states that another requirement of a perfectly competitive market is that there should be freedom of entry and exit. The constraints which exist in this particular case are primarily financial. There are the set-up costs of becoming a dealer. These costs involve acquiring the storage tanks and a location which is close to harbour water.

On the demand side, there are some very large dealers in the Boston area, like James Hook and Company and The Bay State Lobster Company, to name but two. Because of their size it is possible for them to affect the market price on a given day (for instance by getting a good buy on a large quantity of Newfoundland lobsters). But, the companies cannot control the market in a consistent manner because of competition. On the supply side are equally large or larger concerns such as Hopkins, Clearwater, and Nickersons, and it is in their interest to obtain as high a price as possible for the lobster.

The supply side is competitive, however, since lobsters are available up and down the coast from the Rhode Island to Newfoundland. Although dealers do have "agreements" with processors, these agreements can be broken and dealers could shop around.

The people that were contacted in Boston by the study team all stressed the fiercely competitive aspect of the lobster business. There have been few recent entrants into the demand side as dealers. Most of the firms have been in business for over thirty years. A few have left.

The firms must be earning a "fair" rate of return or they would not specialize in the lobster business. In order to determine the actual rate of return earned by the companies, all the books of the dealers involved in the Boston market would have to be made available to the researchers. It is obviously outside the capabilities of Newfoundland agencies to do this.

Thus, while specific proof is not presented, it appears that the conditions in the dealers' market in Boston are more consistent with market models which are competitive. The evidence tends to discount the "Boston conspiracy" theory which states that the Boston dealers' market is oligopsonistic - that is controlled by a small group of colluding buyers (dealers).

B. II. 3 Grading - Quantitative Characteristics. Lobsters are bought in the dealers' market in large lots. They are not graded according to size although dealers would be willing to pay the catchers or processors more if the lobsters corresponded to the size demanded by the wholesale market. The higher class restaurant trade would demand 1 1/2 to 2 pound lobsters, whereas, lobster boils would demand 1 1/4 pound lobsters. Because of the slightly warmer waters, Nova Scotia lobsters tend to be slightly larger than Newfoundland lobsters although a large number of good sized lobsters are caught in Newfoundland fishing districts.

B. II. 4 Lobster Shrinkage. Newfoundland lobsters do not command as high a price because of the larger shrinkage[1] (mortality) which seems to occur in Newfoundland and Magdalen Island lobsters and the greater time needed to "season[2]" the lobsters. Lobsters removed from the ocean water, if they are to remain alive, must recover from the biological trauma of removal. The length of time needed for seasoning is a function of the length of time the lobsters have been removed (no longer than 48 hours) and the conditions in which they have been kept. Lobsters kept in rather cool conditions (1 - 5°C) become dormant, whereas lobsters kept in say 25°C will weaken as they try to cool themselves.

It is thought, as has been argued, that the long truck haul from Newfoundland and the biological characteristics of the Newfoundland lobster when they arrive in Boston account for the greater shrinkage (about 10%) and longer seasoning required (3 or 4 days as opposed to 1 day for Western Nova Scotia). One Boston dealer stated that he had noted that the lobsters seemed to go into "shock" when introduced to the harbour water. He then introduced refrigerated water to about 45°F (6 - 7°C). The dealer noted that the mortality (shrinkage)

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[1] Shrinkage is a term used in the industry to indicate mortality and not biological shrinkage. This latter form of shrinkage can only occur due to differences in the salinity of the water. If lobsters are put in less saline water, there will be a weight gain. Hence, Newfoundland lobsters put into Boston harbour water should experience a weight gain, all other things being equal.

[2] See p. 5 for explanation of this term.

dropped dramatically, and the seasoning period was reduced to about one day. This phenomenon has been confirmed by biologists specializing in lobsters in the U.S. and Canada. What the dealer observed as "shock" was indeed shock. Marine life, as do mammals, become acclimatized to particular temperatures, and suffer shock when transferred suddenly from one environment to a significantly different one. This is exactly what is done with Newfoundland lobsters.

The McLeese study[1] outlined the effect of changes in water temperature on lobster activity under otherwise ideal conditions--full salinity, full oxygen, and not just having suffered the shock of transportation out of water. If Newfoundland lobsters are acclimatized to $5^{o}C$, then movement to $20^{o}C$ would reduce activity by 100 percent. Placement in $26^{o}C$ water would cause 50 percent mortality within 48 hours. But Boston water probably has a lower saline content than the water around Newfoundland. This lower salinity coupled with the trauma of being out of the water will no doubt increase mortality.

In summary, Boston dealers do not pay as much for Newfoundland lobsters because they do not perform as well. Extra costs <u>are</u> involved in working with the Newfoundland lobsters. If the dealers are quite competitive, then they are also very cost conscious (in contrast, most monopolists are not). Hence, the dealers must offer a lower price to stay in business.

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[1] D. W. McLeese, "Effects of Temperature Salinity and Oxygen on the Survival of the American Lobster," Journal of the Fisheries Board of Canada, 13(2), 1956, pp. 247-272.

The fundamental point is that the temperature problem is primarily one created by the Boston dealers themselves (other than dealers such as the one above), and the problem could be overcome by these same dealers at some additional cost.

While the Boston dealers have been singled out on this point, the problem will occur wherever Newfoundland lobsters are sold. Dealers and wholesalers will not be aware of the problem because it does not occur with their major sources of supply, Nova Scotia and Maine.

The problem could be handled by the processors by seasoning the lobsters in slightly warmer waters such as Nova Scotia or Grand Manan. This solution is obviously taken by many Nova Scotia processors. As one would expect in a competitive situation, part of the cost savings through mortality reduction will be passed on to the fishermen.

B. II 5 Price Differentials. The price differential in Boston between Nova Scotia and Newfoundland lobsters has been noted. Table 10 shows this difference over the last four years. For the week of May 2nd, 1980 the difference was $ .37. However, it is suspected that the Newfoundland lobsters were brought in later during the week thereby helping to determine the dealers' market price. Note that the following week Nova Scotian lobsters were down to $2.25 per pound. This drop probably reflects the arrival on the market of the Newfoundland lobsters. For most of the period during May the spread was $ .07 to $ .10. The staff of the Boston dealers confirm that there is a much higher shrinkage with the Newfoundland lobsters. If on the average the total shrinkage is 10 percent greater for Newfoundland lobsters than for Nova Scotia lobsters, then, consequently, at $1.10 per pound in Boston for

Table 10

Weekly Lobster Prices in Boston
$ U.S.

SAMPLE DATE			SOURCE OF LOBSTERS				
			Maine	Nfld.	Nova Scotia	Native Boston	Boston South Shore
1977	April	15			2.30		
	April	22			2.20	2.00	
	April	29			2.10	1.80	2.00
	May	06		1.70	1.80	1.80	
	May	13		1.70	1.75	1.80	
	May	20		1.72	1.87	1.80	1.80
	May	27	1.95		1.67	1.80	1.90
	June	03		1.62	2.00	1.80	
	June	10	1.90	1.65			
	June	17	1.90	1.80		1.80	1.90
	June	24	2.17	2.00	2.20	1.80	2.00
	July	01	2.25	2.03	2.15	1.90	2.00
	July	03	2.30	2.10	2.25	1.90	2.00
	July	15				1.90	2.00
	July	22	1.67		2.17	1.80	1.85
	July	29	1.65		2.25	1.85	1.80
1978	April	14			4.25		
	April	21			3.20		
	April	28			2.50	2.25	2.40
	May	05		2.05	2.20	2.00	2.27
	May	12	2.25	2.00	2.25	2.00	2.10
	May	19		2.02	2.15	2.12	2.20
	May	26		2.02	2.25	2.00	2.05
	June	02		2.00	2.25	2.00	2.05
	June	09	2.15	1.92		2.00	2.00
	June	16	2.20	1.92		2.00	2.05
	June	23	2.65	2.17	2.45	2.25	2.37
	June	30	2.90	2.60		2.25	2.45
	July	07	2.85			2.25	2.40
	July	14				2.12	2.30
	July	21	1.90			2.00	2.00
	July	28				1.85	1.90

Continued . . . .

Table 10
(Continued)
Weekly Lobster Prices in Boston
$ U.S.

SAMPLE DATE			SOURCE OF LOBSTERS				
			Maine	Nfld.	Nova Scotia	Native Boston	Boston South Shore
1979	April	13			3.00	2.75	
	April	20			2.50	2.50	2.75
	April	27			2.20	2.10	2.35
	May	04	2.35	2.00	2.15	2.12	2.25
	May	11	2.10		2.02	2.10	2.10
	May	18		1.90	2.05	2.10	2.05
	May	25		1.92	2.00	2.00	2.00
	June	01		1.87	1.90	2.00	2.00
	June	08		1.85		2.00	2.05
	June	15		2.00		2.00	2.10
	June	22		2.05		2.10	2.20
	June	29		2.25	2.35	2.20	2.25
	July	06				2.00	2.10
	July	13				1.85	2.00
	July	20			2.35	1.75	1.80
	July	27				1.60	1.65
1980	April	18				4.00	
	April	25				2.50	
	May	02		2.25	2.62	2.80	2.65
	May	09			2.25	2.50	2.50
	May	16		2.10	2.17	2.25	2.25
	May	23		2.10	2.20	2.15	2.25
	May	30		2.20		2.20	2.25
	June	06		2.20		2.25	2.25
	June	13		2.05		2.35	2.25
	June	20		2.35		2.60	2.20
	June	27					
	July	03				2.35	2.65

Source: Boston Blue Sheets

lobster the comparable price for Nova Scotia lobsters should be about $2.30, but in fact it was only $2.20. In addition, there are other handling and seasoning costs associated with Newfoundland lobsters. It can only be concluded that some of the Boston dealers do absorb part of the additional costs. This conclusion is consistent with a competitive market in which both the buyers and the sellers are sensitive to price changes and levels.

In addition to the above lesser price realized for Newfoundland lobster in Boston of about $ .10 per lb, there is also a transportation cost about $ .06 greater on average for Newfoundland lobsters than for Nova Scotia lobsters. This plus greater mortality in transit accounts for a large portion of the differentials in prices paid to fishermen in Nova Scotia and various communities in Newfoundland. (See Tables 7(a) (b) (c))

B. II. 6 Sources of Supply to the Boston Market. From November to the latter part of April the supply to the Boston market is primarily from Maine and Nova Scotia. The supply is both "pound stock" and "recently caught". From the early part of May to the end of May, the supply is primarily from Newfoundland and Nova Scotia. The local supply and the Maine supply are light. At the first part of June the supply is dominated by the Newfoundland lobsters as the Western Nova Scotia (District 4) season ends on May 30th. Later in June pound stock from Nova Scotia and supplies from Maine increase. As the shedding or moulting season ends, the local supply increases so that by July and August the local supply can meet the demand of the Boston market. Local supplies remain good until October.

Thus far one has been given the impression that supply to the Boston market is from all along the Coast. While the Americans do not

have a season per se, catchers do not go out during the winter and early spring. Furthermore, native lobsters around the Boston area shed (moult) in early June thus reducing the supply. It should be noted that soft-shell lobsters command a lower price than hard shell. From Table 10 it is clear that Nova Scotian lobsters have a higher price than "native" lobsters in June. This observation seems to contradict the prediction that the closer one is to the market then the higher the price. However, one must take into consideration that Western Nova Scotia lobster are hard-shell whereas natives are soft-shell at that time of year.

What conclusions can be drawn about the role of Newfoundland lobsters in this market? Firstly, during May and the early part of June, Newfoundland lobsters are very important to the market. During the early part of May, the Boston Blue Sheet noted that the market was weakening in anticipation of cheaper Newfoundland lobsters. In less than a month in 1980 the ex-vessel prices paid to local fishermen fell from $4.00 per pound on April 18 to $2.25 on May 16. The fall from the $4.00 level was probably due to the introduction of Newfoundland lobsters. Why didn't the processors and dealers keep the prices at $4.00 and thus permit a better return to the fishermen (catchers)? Newfoundland fishermen instead of receiving $1.55 per pound ($1.85 Canadian) could have received $2.40 per pound ($2.77 Canadian). The answer to this question again lies in the fact that neither the dealers nor the suppliers (processors, etc.) can control the market because it is competitive.

B. II. 7 Price Sensitivity of Demand. What is the exact relationship between the additional quantity of lobster traded and the market

price? Technically, if one assumes demand to be constant, one should be able to measure the demand price elasticity. Unfortunately, the study team does not have enough information on the volume of trade in the Boston market to make such a prediction. It is clear that if the Newfoundland lobster trade can be diverted to the more lucrative European market, this action will raise the dealer price for all lobster in the Boston market. Increases in the dealer market will obviously have an effect on the prices paid to fishermen.

Unpublished information provided to the study team indicates that the demand for live lobsters in the United States is price sensitive and inversely related to price. This finding implies that increases in lobster landings may increase the revenue received by all lobstermen even though prices are falling. A crucial point is that the revenue to local lobstermen would fall since all lobstermen are paid the same price in the market place and now the price paid for their supply has fallen. Although the revenue is increasing, the additional revenue must cover additional costs if income is to rise. The Chung study of 1975 tends to confirm these findings, that is, the demand for lobsters is very price sensitive.[1]

As would be expected, the importation of Canadian live lobsters has a negative impact on wholesale prices in the United States.

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[1]Chung, Pauline, "Demand and Prices of Canadian Lobsters: An Econometric Study," Social Science Research Branch, Fisheries and Oceans, 1975, p. 25.

B. II. 8 Conclusions.

1) It is clear from the volume of lobsters traded that the Boston market is the principal dealers' market for Newfoundland lobsters.

2) This market can be generally characterized as being competitive. Prices are determined by the dual forces of supply and demand. These prices are consistent with efficiency and "fair" within the context of a free market economy.

3) The demands of the dealers are derived demands. That is, they sell to meet the demands of wholesalers who in turn are meeting the demands of consumers. For example, prices in the dealers' market will rise around Mother's Day as the public demands lobsters at the retail level.

4) On the supply side, lobsters are supplied to the market from various localities and in various quantities. The Canadian imports comprise about 30 percent of the total U.S. supply.

5) While small in the overall context, it is clear that the Newfoundland lobster supply is important during May and June. This is the time of year when the largest volume of lobsters are on the market.

6) In a manner which mirrors the primary market, prices in the dealers' market are subject to seasonal fluctuations. Prices reach a peak in January and continue to fall into the summer months.

7) Nova Scotia lobsters, especially those from Western Nova Scotia, command a higher price in Boston than Newfoundland lobsters. However, this price differential is not substantial and is less than one would expect given differences in handling costs and shrinkage.

8) Newfoundland lobsters in Boston suffer a greater shrinkage rate than those from Nova Scotia and Maine. This may be due in large part to the greater differences in water temperature which exist between Newfoundland and Boston Harbour. This higher shrinkage causes prices paid for Newfoundland lobsters on the Boston market to be lower than for Maritime or Maine lobsters.

9) It is clear that lobster dealers in other provinces are exhibiting increased interest in non-traditional markets, in particular, the Billingsgate market in Britain. A combination of prices much higher than North American norms, and revised airfreight rates make this new market extremely attractive for Newfoundland processors. New airfreight rates afford a competitive advantage to Canadian dealers both for European and American wholesale markets.

10) Demand for live lobsters in the U.S. is highly price sensitive. Increases in lobster landings will lower prices but increase overall sales. Thus, the revenue received by all lobstermen may increase even though prices are falling.

11) The importation of Canadian live lobsters has a negative impact on wholesale prices in the United States.

B. III. Price Differentials Between the Primary and Dealers' Markets

B. III. 1 Correlation Between the Dealers' Market and Primary Markets. Thus far we have discussed prices in the primary markets and the dealers' market in Boston. The Chung study and a confidential study conducted in the United States, based on monthly data, both point to a relationship between the dealers' market and the primary market. It is generally presumed that the ex-vessel price in the primary market is dependent upon the wholesale price which is the price the dealers receive when they sell to retailers (see Chart 1, p.8). As we discussed earlier, it is clear that the markets are inter-dependent. What is not clear is the line of causality. If there is a shortage of supply but strong demand, as indeed happened in 1980 on the Northern Peninsula, then prices to the catchers will rise. This implies that the prices will rise in the dealers' market. Thus, prices in the primary market move in the same direction as price changes in the dealers' market.

In contrast to our observation, the Chung (1975) study estimated that a 10 percent increase in the estimated wholesale price would result in 10.79 percent of prices being passed on to the fishermen[1]. In other words the increase which is passed is even greater than the initial increase. The American study has produced somewhat different results with approximately 1/2 of the increase being passed on to the fishermen.

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[1]Chung, pp. 25-6.

In our study we have examined the following hypotheses. These are:

(1) Is there a correlation between dealers prices paid in Boston and the ex-vessel prices paid

   (i) for Newfoundland lobster?
   (ii) for Nova Scotia lobster?
   (iii) for Maine lobster?

The results are provided in Table 11 below:

Table 11

Correlation Coefficients of Primary Market Prices with Boston Dealer Prices

Newfoundland	.87
Nova Scotia	.86
Maine	.96

Source: Derived from Analysis of Data Using Time Series Computer Statistical Package.

As can be seen, there are very high correlations indicating a high degree of association[1] between the dealers' market prices in Boston for lobster and the ex-vessel or primary market prices. This result is what we would expect by using average data for the month. The results do not tell us anything about the causal linkages - that is whether primary market prices determine Boston dealer prices or vice versa.

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[1] If the association were perfect, that is every time the Boston dealers' prices moved so did the Newfoundland primary market prices, the coefficient would be 1.0.

B. III. 2 Average Mark-ups and A Suggested Guideline for a Normal Mark-up Range. A processor mark-up may be defined as the ratio of the Boston dealer price[1] to processors over the price paid to the lobster fishermen of a particular locality. The lower the mark-up ratio the closer the ex-vessel price is to the Boston dealer price. One would expect that the mark-up would be lower the closer the collection point is to the Boston market. The primary reasons for the lower mark-up would be lower transportation and handling costs and lower storage costs. We would, therefore, expect that the mark-ups on Maine lobsters would on average be lower than those on Nova Scotia lobsters. Both mark-ups would in turn be lower than those on Newfoundland lobsters. In other words we would expect decreasing mark-ups even though the dealers' markets for all the lobsters are competitive. If the markets were not competitive on the buyers' side or the sellers' side, then the above relationship might break down. For example, if Nova Scotia fishermen are given a better deal by their processors than Newfoundland fishermen, then the mark-up on Nova Scotia lobsters should be lower than would be indicated by transportation costs. We should see a substantial difference which cannot be explained by differences in transportation costs and shrinkage.

What do the actual mark-ups look like amongst the provinces and states? If one examines the average mark-ups over the past years from week to week, then it does seem that the mark-up on Maine lobsters are

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[1] These prices were converted to Canadian dollars.

less than on Nova Scotia lobsters. These mark-ups are in turn less than the mark-up on Newfoundland lobsters. The differences, however, do not appear to be substantial. As the mark-ups do vary from week to week and from one year to the next, it is possible that the differences in the mark-ups are due to random disturbances rather than differences in transportation costs, shrinkage or market structure. Using standard statistical techniques our study team could not reject the hypothesis that the differences between the mark-up on Nova Scotia lobsters and on Newfoundland lobsters were due to random disturbances. In other words the differences in mark-ups are not statistically significant.

It will be recalled that an objective of our study was to evaluate the wholesale (dealer) prices paid to Newfoundland fishermen in comparison with prices paid to fishermen in other provinces. We can conclude that the average mark-up on Newfoundland lobsters does not differ significantly from that on Nova Scotia lobsters.

Mark-ups may not only vary over time amongst provinces and states, but they may vary within the province. Table 12 illustrates this point with reference to four local communities. In general[1], the closer one gets to Port-aux-Basques the lower the mark-up. It is also noted that the mark-ups may vary from week to week due to market conditions, exchange rate changes, or delivery lags. For this reason it is not possible to talk about a mark-up rather we can note a normal mark-up

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[1]Valleyfield seems to marginally break this pattern.

Table 12

Ratios of Boston Dealer Lobster
Prices to Fishermen Prices
In Selected Newfoundland Communities

	Port Au Choix			
	1977	1978	1979	1980
May 1st				
May 2nd	1.483			1.35
May 3rd	1.429		1.29	1.28
May 4th			1.31	1.34
June 1st	1.357		1.36	1.23
June 2nd	1.373		1.36	1.11
June 3rd	1.462		1.46	1.27
June 4th	1.631		1.51	1.52
July 1st			1.64	1.2
Average	1.456		1.419	1.288
Standard Deviation	.099		.125	.126
Average (all years)	1.379			
Standard Deviation	.134			
Normal[1] Range	1.09-1.67			

[1] 95 Percent Confidence Interval.

Continued . . . .

Table 12
(Continued)
Ratios of Boston Dealer Lobster
Prices to Fishermen Prices
In Selected Newfoundland Communities

		Valleyfield		
	1977	1978	1979	1980
May 1st				
May 2nd				1.37
May 3rd				1.36
May 4th		1.36		1.34
June 1st		1.36		1.34
June 2nd			1.45	1.24
June 3rd			1.56	1.42
June 4th			1.61	1.57
July 1st			1.75	1.24
Average		1.36	1.593	1.36
Standard Deviation		0	.124	.105
Average (All Years)	1.426			
Standard Deviation	.146			
Normal Range	1.134-1.718			

Continued . . . .

Table 12
(Continued)
Ratios of Boston Dealer Lobster
Prices to Fishermen Prices
In Selected Newfoundland Communities

	Twillingate			
	1977	1978	1979	1980
May 1st				
May 2nd				1.37
May 3rd				1.36
May 4th		1.36		1.42
June 1st		1.36		1.42
June 2nd		1.30	1.45	1.31
June 3rd		1.30	1.56	1.5
June 4th		1.48	1.61	1.65
July 1st		1.78	1.75	1.31
Average		1.43	1.59	1.418
Standard Deviation		.184	.12	.113
Average (All Years)	1.460			
Standard Deviation	.152			
Normal Range	1.156-1.764			

Continued . . . .

Table 12
(Continued)
Ratios of Boston Dealer Lobster
Prices to Fishermen Prices
In Selected Newfoundland Communities

	Bonavista			
	1977	1978	1979	1980
May 1st				
May 2nd				1.41
May 3rd				1.39
May 4th				1.46
June 1st				1.42
June 2nd		1.30	1.45	1.31
June 3rd	1.65	1.30	1.56	1.5
June 4th	1.84	1.48	1.61	1.74
July 1st		1.78	1.75	1.4
Average	1.745	1.465	1.59	1.454
Standard Deviation	.134	.226	.124	.128
Average (All Years)	1.519			
Standard Deviation	.172			
Normal Range	1.175-1.863			

Source: Boston Blue Sheets, FIAB and Study calculations.

range. Using statistical tables we can note that we would expect the mark-ups to fall within this range 95 percent of the time.

Earlier this year the Provincial Government suggested a minimum price that processors should be willing to pay to the fishermen. This brings up the entire issue of whether a government should suggest prices to the market as is done in the case of agricultural marketing boards. The objective of these boards is to redistribute incomes from the consumers to producers at the cost of reduced efficiency. Without the marketing boards the number of farmers would probably be reduced, and the size of the farms would increase. Marketing boards may also help to control the fluctuations in supply thereby reducing the risks associated with price fluctuations to the producer and processor.

While the notion may be appealing, there are certain difficulties when the concept is applied to the lobster industry. There are biological problems and high storage costs in attempting to pound lobsters, particularly in Newfoundland. In addition, fishermen cannot effectively control the amount of lobster they catch at any one time. More important, however, is that the marketing boards effectively become monopolists in the market place since the board controls supply. In the case of lobsters, the province can only and partially control its own supply and not the markets. In addition the idea of forcing higher prices in the market place only makes sense if demand is not very price sensitive. In the case of lobsters demand is very price sensitive.

For these reasons, we feel that the market should normally be left to its own devices.

A separate issue from the one of whether or not there should be minimum prices is what should a minimum price be? One might ask if we could somehow use the mark-up range to determine a minimum price at the start of the season? Why not for instance take the upper limit of the range and then divide this value into the Boston price for Nova Scotia lobsters just before Newfoundland lobsters arrive at the market? We have already seen, however, that the Boston price for Western Nova Scotia lobsters will probably differ from the Boston price for Newfoundland lobsters due to differences in shrinkage and handling costs. Therefore, the Nova Scotia price may not be the appropriate one. A very serious problem is that the above method will overstate the price which Newfoundland fishermen should be paid since it does not reflect market conditions at the time the Newfoundland lobsters hit the market. During late April and early May lobster prices are falling. Another difficulty is that a suggested minimum price should not be set for the entire season but would have to vary daily depending on market conditions in Boston. In general, then, there are real administrative difficulties in trying to set suggested prices.

Given the administrative difficulties, the possibility of misinterpretation of the suggested prices, and the potential loss in income to fishermen if inappropriate prices are set, the study team suggests that the markets be left alone to determine their own prices.

As an alternative solution the study team proposes that a normal mark-up range be established from the data contained in Section B (III) of this Report. If the prices paid or offered go outside of this "normal" mark-up range then an investigation could proceed as to why the conditions are non-normal. This procedure

would leave the market free to operate efficiently, and it would guarantee that the fishermen would receive the best price for their lobster and maximum income from the lobster given market conditions.

B. III. 3 Conclusions.

1) There is a price differential between the ex-vessel price paid to Newfoundland fishermen and the Boston dealers' price. This differential pays for transportation and for the services of the processor or commission buyer. These services are necessary in order to collect the lobsters from widely scattered fishermen and move them to the Boston market.

2) While it is not possible to state categorically that excess profits are not being made, it is highly unlikely since the long-term market conditions in Boston are competitive. These competitive conditions would be consistent with a "normal[1]" rate of return in the industry.

3) There is a "normal" range of mark-ups on Newfoundland lobsters. This range is observable and can be determined with relative precision over time.

4) The province can only partially control its own supply of lobsters and cannot control the markets at all. Thus, the "marketing board" approach to the industry, with controlled prices etc., is inappropriate for the lobster fishery.

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[1] If one believes that the rates of return under competitive conditions are fair, then one must conclude that the return to Boston dealers is fair for the services they provide.

B. IV. The Wholesale Market

The wholesale market is the intermediate market between the dealers and the retail markets (see Chart 1, p. 8). Lobsters are sold in this market by dealers to the restaurant trade, to fish retailers, and to grocery stores. It is possible to see the vertical price progression by way of an example. In a given week in May the price to fishermen on the Burin was $1.80 per pound. The St. John's price at the airport was $2.30 per pound. The freight cost to Toronto was 24¢ per pound. The dealer price in Toronto was $2.85. The wholesale price for "chickens[1]" was $3.25 per pound, 1 1/4 pound $3.60, and $3.95 for 1 1/2 pound lobsters. "Selects" (greater than two pounds) were negotiated on an individual basis. The comparable retail prices were $4.50, $4.75 and $4.99 respectively. Mortality loss was as high as 50 percent - and normally about 20 percent, which is extremely high.

Boston prices exhibit similar tendencies. The wholesale price for Newfoundland lobster during the second week in June was about $2.50 per pound (U.S.). Canadian fishermen in Newfoundland were receiving as much as $1.95 per pound (U.S.). The Boston wholesale price for 1-1 1/2 pound was $2.95 and for selects $3.30. The Boston retail price was $4.00 per pound for 1-1 1/2 pound lobsters.

As one proceeds through the marketing structure described above, it is clear that the size of the lobster affects the price per pound of the lobster. At the primary level, the only distinction made in the

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[1]Lobsters which weigh less than 1 1/4 lbs, and more than 1 lb.

Maritime Provinces is between "canners" and "market" lobsters. In Newfoundland no such distinction is made. It is only at the wholesale market, however, that formal recognition is given to finer grade size distinctions among "market" lobsters. Even so, there are the basic categories of "canners" and "market" lobsters, and within the latter there are even finer distinctions the farther one proceeds up the market chain. The New York wholesale market seems to be more sophisticated than the Boston market in the sense that there are five size categories as opposed to three. At the dealer level there is some informal breakdown in that some wholesalers will prefer to buy from some dealers who in turn will buy from selected processors because the processors tend to provide a certain size of lobster.

A simple examination of the New York wholesale data over several years tends to show a seasonality pattern. More sophisticated seasonal adjustment programs break out the exact nature of the seasonality component. In Table 13 a typical pattern for 1 1/2 pound lobsters on the New York market using monthly data from 1974 to 1979 is presented.

Table 13

Seasonal Factors in the New York Wholesale Market for 1 1/2 Pound Lobsters, 1974-1979

J	F	M	A	M	J	J	A	S	O	N	D
1.12	1.23	1.20	1.18	.80	.80	.86	1.03	1.01	.94	.94	1.01

Source: New York Green Sheets and computer analysis through a seasonal adjustment package on TSP.

The findings for the New York market tend to confirm the findings for the other markets. It is clear that May and June are low months, and the prices in these months are 80 percent of the average price for the year. It is exactly during these months that Newfoundland lobster come into the market. These data hide some pertinent information as to why the prices are low. Typically the demand is moderate in the retail markets during the period while supplies are building. In addition, Massachusetts lobsters are shedding during the early part of June, and as was noted before, the soft-shelled lobsters tend to command a lower price. Heavy demand in August and September tend to push up the wholesale price. These data may provide some information as to why lobsters are pounded. Although the net gains from pounding can only occur if the increases in prices compensate for the additional costs.

While considerable effort was made to gather information on quantities traded and data on the size of the lobsters traded, these data were unavailable. Thus, no definitive statement about the effects of the importation of Newfoundland lobster on the New York market is possible.

B. V. Retail Markets

No data are available on the retail price for live lobsters and, therefore, it was almost impossible to carry out this aspect of the study. It is clear that in dollar terms there is a large difference between the wholesale price and the retail price. Recall that in Boston the wholesale price of $2.95 became a retail price of $4.00 at the wharf. While in Toronto, a wholesale price of $3.95 became a wholesale price of $4.99 or $3.60 became a wholesale price of $4.75. Roughly, the retailers seem to add about $1.00 onto the price of the lobster. In St. John's a local retailer was selling lobster for $3.90 per pound. Local buyers could buy them in the city at the overpass for $2.50 per pound and "out around the Bay" at $1.80 - $2.25 per pound. It would seem that retailers could make a "killing" on lobsters but as one small retailer in Toronto pointed out, "I get them mainly for the kids. They enjoy coming into my fish shop and looking at them." Most retailers do not deal in the size of volume which would make the business profitable. What one does find in the larger cities is that shops are beginning to specialize in the provision of lobsters and that dealers are also becoming retailers. In order to make this work there has to be a good volume. Further, the dealers must have the location to sell on a retail basis.

Over the season one begins to find that lobster prices begin to fall. In Toronto this year prices began to fall in June so that by mid-June 1 1/2 pound lobsters were selling for $4.25 per pound. By late June, the prices had begun to rise again. It may pay, therefore, to pound lobsters in Newfoundland for the Toronto and Boston markets.

PART C. RECOMMENDATIONS

1) The study team has observed that it is possible to establish a "normal" range of mark-ups on Newfoundland lobsters. The team recommends that the FIAB periodically monitor the local and Boston dealer prices to determine specifically the mark-up range. Should the actual mark-up be above the normal range then the Board might, through further sampling, determine if there is a trend and recommend appropriate action to the Minister.

2) A partial solution to the problem of excess supply in May and June can be found in smoothing out the supply to particular markets. This can be done by changing the lobster catching seasons in the province, or abandoning the notion of seasons in a fashion similar to the United States. An investigation should be conducted into the feasibility of pounding lobsters in Newfoundland for the tourist and export markets. Finally, diverting supplies from traditional to new markets would also improve the prices paid for Newfoundland lobsters and smooth out the supply.

3) Some local lobstermen and packers should be taken to Boston to see how their products travel and are received in Boston. An alternative would be to have a group of one or two Boston dealers travel to the Province outlining how the Boston market operates and the conditions in which the lobster were received.

4) The study team recommends that lobster biologists go to Boston in May and June to sample the water in holding tanks. In this way it might be better understood the conditions under which Newfoundland lobsters must try to survive.

5) Lobster processors should be encouraged to discuss shipping problems with the officials from Air Canada and EPA. Similar talks held in Nova Scotia have produced beneficial results. Newfoundland problems are unique.

6) An indepth study should be carried out in co-operation with a local processor to determine the actual returns to be made in shipping lobsters to Europe. Such a study would also determine the costs and outline the actual problems which were encountered.

7) The data bank initiated by this study and outlined in Appendix A should be maintained and expanded. More econometric models should be tested, and the results should be discussed with economists who have developed similar models elsewhere particularly in the United States.

NOTE: There is a possibility that exports to Europe may be curtailed due to European concerns about possible transfer of Gaffkaemia, a blood disease common in the U.S.A. and Canada, but occurs only rarely in European lobsters.

APPENDIX A

Lobster Data Bank

In order to facilitate analysis in this study and future studies it was decided to consiruct a data bank. Many of the series contained in this data bank were compiled solely for this study by Fisheries and Ocean, Canada under contract and, therefore, are unique in Canada.

LOBSTER DATA BANK

Variable Name	Time Period	Description	Source
NFALBS	1977-1979	Pounds of lobster caught in area A of Newfoundland by month	Federal Fisheries & Oceans
NFAKLS	1977-1979	Kilograms of lobster caught in area A of Newfoundland by month	"
NFALDV	1977-1979	Landed dollar value of lobster caught in area A of Newfoundland by month	"
NFBLBS	1977-1979	Pounds of lobster caught in area B of Newfoundland by month	"
NFBKLS	1977-1979	Kilograms of lobster caught in area B of Newfoundland by month	"
NFBLDV	1977-1979	Landed dollar value of lobster caught in area B of Newfoundland by month	"
NFCLBS	1977-1979	Pounds of lobster caught in area C of Newfoundland by month	"
NFCKLS	1977-1979	Kilograms of lobster caught in area C of Newfoundland by month	"
NFCLDV	1977-1979	Landed dollar value of lobster caught in area C of Newfoundland by month	"
NFDLBS	1977-1979	Pounds of lobster caught in area D of Newfoundland by month	"

Variable Name	Time Period	Description	Source
NFDKLS	1977-1979	Kilograms of lobster caught in area D of Newfoundland by month	Federal Fisheries & Oceans
NFDLDV	1977-1979	Landed dollar value of lobster caught in area D of Newfoundland by month	"
NFELBS	1977-1979	Pounds of lobster caught in area E of Newfoundland by month	"
NFEKLS	1977-1979	Kilograms of lobster caught in area E of Newfoundland by month	"
NFELDV	1977-1979	Landed dollar value of lobster caught in area E of Newfoundland by month	"
NFFLBS	1977-1979	Pounds of lobster caught in area F of Newfoundland by month	"
NFFKLS	1977-1979	Kilograms of lobster caught in area F of Newfoundland by month	"
NFFLDV	1977-1979	Landed dollar value of lobster caught in area F of Newfoundland by month	"
NFGLBS	1977-1979	Pounds of lobster caught in area G of Newfoundland by month	"
NFGKLS	1977-1979	Kilograms of lobster caught in area G of Newfoundland by month	"
NFGLDV	1977-1979	Landed dollar value of lobster caught in area G of Newfoundland by month	"
NFHLBS	1977-1979	Pounds of lobster caught in area H of Newfoundland by month	"

Variable Name	Time Period	Description	Source
NFHKLS	1977-1979	Kilograms of lobster caught in area H of Newfoundland by month	Federal Fisheries & Oceans
NFHLDV	1977-1979	Landed dollar value of lobster caught in area H of Newfoundland by month	"
NFILBS	1977-1979	Pounds of lobster caught in area I of Newfoundland by month	"
NFIKLS	1977-1979	Kilograms of lobster caught in area I of Newfoundland by month	"
NFILDV	1977-1979	Landed dollar value of lobster caught in area I of Newfoundland by month	"
NFJLBS	1977-1979	Pounds of lobster caught in area J of Newfoundland by month	"
NFJKLS	1977-1979	Kilograms of lobster caught in area J of Newfoundland by month	"
NFJLDV	1977-1979	Landed dollar value of lobster caught in area J of Newfoundland by month	"
NFKLBS	1977-1979	Pounds of lobster caught in area K of Newfoundland by month	"
NFKKLS	1977-1979	Kilograms of lobster caught in area K of Newfoundland by month	"
NFKLDV	1977-1979	Landed dollar value of lobster caught in area K of Newfoundland by month	"
NFLLBS	1977-1979	Pounds of lobster caught in area L of Newfoundland by month	"

Variable Name	Time Period	Description	Source
NFLKLS	1977-1979	Kilograms of lobster caught in area L of Newfoundland by month	Federal Fisheries & Oceans
NFLLDV	1977-1979	Landed dollar value of lobster caught in area L of Newfoundland by month	"
NFMLBS	1977-1979	Pounds of lobster caught in area M of Newfoundland by month	"
NFMKLS	1977-1979	Kilograms of lobster caught in area M of Newfoundland by month	"
NFMLDV	1977-1979	Landed dollar value of lobster caught in area M of Newfoundland by month	"
NFNLBS	1977-1979	Pounds of lobster caught in area N of Newfoundland by month	"
NFNKLS	1977-1979	Kilograms of lobster caught in area N of Newfoundland by month	"
NFNLDV	1977-1979	Landed dollar value of lobster caught in area N of Newfoundland by month	"
IEVPUS	January 1977 to December 1979	Index of ex-vessel prices by month (1967=100) paid to American fisherme	Fisheries of the United States Current Fishery Statistics
LLCMMT	January 1973 to December 1978	American lobster landings in Canada by month in metric tons	Monthly Review of Canadian Fisheries DBS Cat. 24-002
LLCMDV	January 1973 to December 1978	American lobster landings in Canada current dollar value by month	Monthly Review of Canadian Fisheries DBS Cat. 24-002

Variable Name	Time Period	Description	Source
LLCYMT	1950-1978	Lobster landings in Canada - annual quantity in metric tons	Monthly Review of Canadian Fisheries DBS Cat. 24-002
LLCYDV	1950-1978	Lobster landings in Canada - annual current dollar value	"
CMPCTF	January 1974 to May 1980	Prices paid for Canadian 12 oz. frozen meat in Boston by month	Boston Blue Sheets
NYMPLM	January 1974 to May 1980	Prices paid to wholesaler for Maine or Massachusetts 1 1/2 pound live lobster in New York by month	New York Green Sheets
BSMPMA	January 1977 to June 1980	Boston shippers market monthly prices for Maine lobsters	Boston Blue Sheets
BSMPNS	January 1977 to June 1980	Boston shippers market monthly prices for Nova Scotia lobster	"
BSMPNF	January 1977 to June 1980	Boston shippers market monthly prices for Newfoundland lobster	"
BSMPNB	January 1977 to June 1980	Boston shippers market monthly prices for native Boston lobster	"
BSMPSS	January 1977 to June 1980	Boston shippers market monthly prices for native Southern Shore lobster	"
BSWPMA	1977-1980	Boston shippers market weekly prices from mid-April to the end of July for Maine lobster	"
BSWPNS	1977-1980	Boston shippers market weekly prices from mid-April to the end of July for Nova Scotia lobster	"

Variable Name	Time Period	Description	Source
BSWPNF	1977-1980	Boston shippers market weekly prices from mid-April to the end of July for Newfoundland lobster	Boston Blue Sheets
BSWPNB	1977-1980	Boston shippers market weekly prices from mid-April to the end of July for native Boston lobster	"
BSWPSS	1977-1980	Boston shippers market weekly prices from mid-April to the end of July for native Southern Shore lobster	"
MIMPCL	January 1974 to June 1980	Monthly importers buying price for Canadian lobster	"
NFTLBS	1977-1979	Total pounds of lobster caught - all areas Newfoundland by month	Federal Fisheries & Oceans
NFTKLS	1977-1979	Total kilograms of lobster caught - all area Newfoundland by month	"
NFTLDV	1977-1979	Total landed current dollar value of lobster caught - all areas Newfoundland by month	"
APLBNF	1977-1979	Average price per pound for Newfoundland lobster (ex-vessel prices) by month	Generated
APLBNS	1977-1979	Average price per pound for Nova Scotian lobster (ex-vessel prices) by month	"
APLBNB	1977-1979	Average price per pound for New Brunswick lobster (ex-vessel prices) by month	"
APLBPE	1977-1979	Average price per pound for P.E.I. lobster (ex-vessel prices) by month	"

Variable Name	Time Period	Description	Source
APLBMA	1977-1979	Average price per pound for Maine lobster (ex-vessel price) by month	Generated
NSTKLS	1977-1979	Total kilograms of lobster landed in Nova Scotia by month	Federal Fisheries & Oceans
NSTLBS	1977-1979	Total pounds of lobster landed in Nova Scotia by month	"
NSTKDV	1977-1979	Total dollar value of lobster landed in Nova Scotia by month	"
NBTKLS	1977-1979	Total kilograms of lobster landed in New Brunswick by month	"
NBTLBS	1977-1979	Total pounds of lobster landed in New Brunswick by month	"
NBTLDV	1977-1979	Total dollar value of lobster landed in New Brunswick by month	"
PETKLS	1977-1979	Total kilograms of lobster landed in P.E.I. by month	"
PETLBS	1977-1979	Total pounds of lobster landed in P.E.I. by month	"
PETLDV	1977-1979	Total dollar value of lobster landed in P.E.I. by month	"
USMEXP	January 1977 - April 1980	U.S. exchange rates by month	Bank of Canada Review

Variable Name	Time Period	Description	Source
NC5YL	1977-1978	Metric tonnes of lobster caught in statistical area 5YL of the United States by month	Northwest Atlantic Fisheries Organization
NC5ZEL	1977-1978	Metric tonnes of lobster caught in statistical area 5ZE of the United States by month	"
NC5ZWL	1977-1978	Metric tonnes of lobster caught in statistical area 5ZW of the United States by month	"
NC6AL	1977-1978	Metric tonnes of lobster caught in Statistical area 6A of the United States by month	"
NC6BL	1977-1978	Metric tonnes of lobster caught in statistical area 6B of the United States by month	"
CXUSLB	1977-1979	Canadian exports of lobster in shell to the United States by month (lobster is fresh or frozen in pounds)	Statistics Canada DDS Catalogue 65-004
CXUSDV	1977-1979	Dollar value of Canadian exports of lobster in the shell to the United States by month (lobster is fresh or frozen)	"
TCXULB	1977-1979	Total annual exports of Canadian lobster in shell to the United States in pounds	Generated
TCXUDV	1977-1979	Total dollar value of annual exports of Canadian lobster in shell to the United States	"

Variable Name	Time Period	Description	Source
MATLBS	1977-1979	Total pounds of lobster landed in Maine by month	Current Fishery Statistics Maine landings
MATLDV	1977-1979	Total dollar value of lobster landed in Maine by month	"
APLBDA	1977-1979	Average price per pound for lobster caught in area A of Newfoundland by month i.e. NFALDV/NFALBA	Generated
APLBDB	1977-1979	Average price per pound for lobster caught in area B of Newfoundland by month i.e. NFBLDV/NFBLBS	"
APLBDC	1977-1979	Average price per pound for lobster caught in area C of Newfoundland by month i.e. NFCLDV/NFCLBS	"
APLBDD	1977-1979	Average price per pound for lobster caught in area D of Newfoundland by month i.e. NFDLDV/NFDLBS	"
APLBDE	1977-1979	Average price per pound for lobster caught in area E of Newfoundland by month i.e. NFELDV/NFELBS	"
APLBDF	1977-1979	Average price per pound for lobster caught in area F of Newfoundland by month i.e. NFFLDV/NFFLBS	"
APLBDG	1977-1979	Average price per pound for lobster caught in area G of Newfoundland by month i.e. NFGLDV/NFGLBS	"

Variable Name	Time Period	Description	Source
APLBDH	1977-1979	Average price per pound for lobster caught in area H of Newfoundland by month i.e. NFHLDV/NFHLBS	Generated
APLBDI	1977-1979	Average price per pound for lobster caught in area I of Newfoundland by month i.e. NFILDV/NFILBS	"
APLBDJ	1977-1979	Average price per pound for lobster caught in area J of Newfoundland by month i.e. NFJLDV/NFJLBS	"
APLBDK	1977-1979	Average price per pound for lobster caught in area K of Newfoundland by month i.e. NFKLDV/NFKLBS	"
APLBDL	1977-1979	Average price per pound for lobster caught in area L of Newfoundland by month i.e. NFLLDV/NFLLBS	"
APLBDM	1977-1979	Average price per pound for lobster caught in area M of Newfoundland by month i.e. NFMLDV/NFMLBS	"
APLBDN	1977-1979	Average price per pound for lobster caught in area N of Newfoundland by month i.e. NFNLDV/NFNLBS	"
ATNFLB	1977-1979	Total pounds of lobster landed in Newfoundland annually	"
ATNFDV	1977-1979	Total dollar value of lobster landed in Newfoundland annually	"

Variable Name	Time Period	Description	Source
ATNSLB	1977-1979	Total pounds of lobster landed in Nova Scotia annually	Generated
ATNSDV	1977-1979	Total dollar value of lobster landed in Nova Scotia annually	"
ATNBLB	1977-1979	Total pounds of lobster landed in New Brunswick annually	"
ATNBDV	1977-1979	Total dollar value of lobster landed in New Brunswick annually	"
ATPELB	1977-1979	Total pounds of lobster landed in P.E.I. annually	"
ATPEDV	1977-1979	Total dollar value of lobster landed in P.E.I. annually	"
ATMALB	1977-1979	Total pounds of lobster landed in Maine annually	"
ATMADV	1977-1979	Total dollar value of lobster landed in Maine annually	"